

ProSeries[®]

by Blue-White Ind.



**PRECISION CHEMICAL
METERING & FLOW
MONITORING**

ProSeries[®]

METERING PUMPS

**PRECISION
CHEMICAL
METERING**

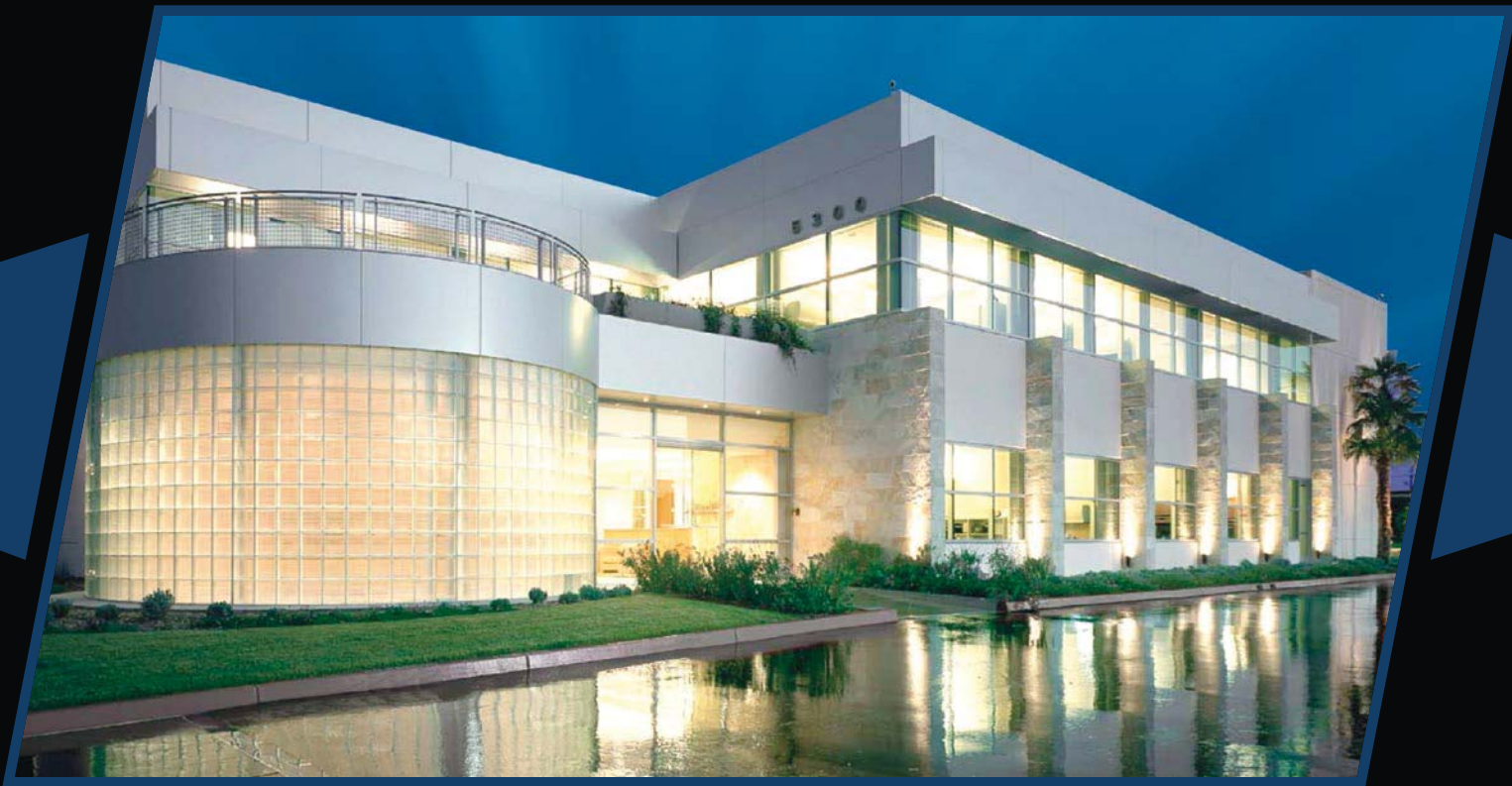
ProSeries®

by Blue-White Ind.

ProSeries® products are engineered and built tough to handle the demands of a variety of chemical dosing and flow measurement applications.

On these pages you'll learn about Flex-Pro® Peristaltic Metering Pumps; Chem-Pro® Diaphragm Metering Pumps; Sonic-Pro® Ultrasonic Flowmeters; and CHEM-FEED® Engineered Skid Systems.

With ProSeries® products you can count on top notch product engineering and product testing, highest quality materials of construction and careful packaging.



ProSeries® products are backed by a worldwide network of highly qualified distributors and representatives committed to providing an unparalleled level of customer service.

Blue-White®

Industries, Ltd.

BLUE-WHITE® INDUSTRIES

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www.blue-white.com

BLUE-WHITE® INDUSTRIES is a privately held company located in Huntington Beach, California. Blue-White® is a manufacturer of Peristaltic and Diaphragm type Metering Pumps, Complete Metering Systems, Variable Area Flowmeters, Ultrasonic Flowmeters, Digital Paddlewheel Meters, and Water Treatment Accessories.

Blue-White® is a company that is pleased to provide expert technical assistance, outstanding customer service and exceptional warranty coverage.

In addition, Blue-White® takes pride in the way we treat our employees, including paying competitive wages and providing excellent benefits. More than 50% of our current workforce have been with the company 20+ years. We believe happy employees build better products.

***Our Passion is Delivering Solutions by Providing Products
that Enhance the Quality of Life***

COMPANY INFORMATION

Date of Incorporation: January 9, 1957

Company Trade Marks:

Blue-White®

CHEM-FEED®

FLEXFLO®

ProSeries®

ProSeries-M®

Chem-Pro®

Sonic-Pro®

Flex-Pro®

BW DIGI-METER®

Flex-A-Prene®

DiaFlex®

TFD Patented Tube Failure Detection System

INDUSTRIES SERVED

Water and Waste Water Treatment

Oil and Gas Industry

Rural Water Systems

Aquaculture

Agriculture

Food and Beverage Manufacturing

Chemical Processing

Car and Truck Wash

Swimming Pool

COMPANY HEADQUARTERS

Blue-White Industries® is located in Huntington Beach, California. Blue-White® designed and built their 50,000 square foot manufacturing facility and corporate offices with the goal of providing an attractive, comfortable and highly functional workplace.

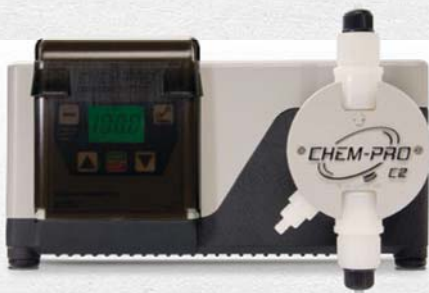
This large headquarters building takes up five lots and is on three streets: Business Drive, Chemical Avenue and Production Lane. Corporate address is: 5300 Business Drive, Huntington Beach, California 92649 USA.

In addition, Blue-White® owns and operates a 9000 square foot testing (NIST), injection molding and warehousing facility also located on Business Drive in Huntington Beach.



PERISTALTIC METERING PUMPS

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Flex-Pro® PERISTALTIC METERING PUMPS

*Which **Flex-Pro®** Metering Pump will work best in Your Application?*



A2



A3



A4

Flow Output Range	.02-14.9 GPH	.001-33.3 GPH	.01-158.5 GPH
Turndown	100:1	2,500:1	
Warranty	2 YEAR		
Variable Speed DC Motor	Brush	Brushless	
TFD (Pat.#7,001,153 and 7,284,964)	✓	✓	✓
Maintenance Mode (Pat. #8,215,931)	✓	✓	✓
Motor Reverse	✓	✓	✓
Tube Info Button	Timer	Revolution Counter and Timer	
Input: Remote Start/Stop	✓	✓	✓
Input: 4-20mA	✓	✓	✓
Input: Frequency (Pulsed)	✓	✓	✓
Output: 4-20mA	Optional	✓	✓
Output: Pulse	✗	✓	✓
Proportional Dosing	✗	✓	✓
Password Protect (PIN)	✗	✓	✓
Industrial Ethernet (IP)	Optional	✗	✗
Profinet or Profibus	Optional	✗	✗
Modbus TCP or Modbus RTU	Optional	✗	✗

FLEX-PRO® PERISTALTIC PUMPS have smooth, quiet pumping action and deliver accurate amounts of chemical to your system. Three Flex-Pro® models are offered featuring a broad range of output rates, electronics options and features. If you don't see the Flex-Pro® pump that meets your system requirements, please contact the factory. Blue-White® specializes in meeting OEM requirements.

FLEX-PRO® APPLICATIONS INCLUDE

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

What makes **Flex-Pro**® a Superior Peristaltic Metering Pump? Exceptional Innovation.

PATENTED TUBE FAILURE DETECTION

Detects tubing failure with no false triggering.



Patents 7,001,153 & 7,284,964

ONE BUTTON PRIME

Operator-friendly touch pad.

MULTIPLE SIGNAL INPUT AND OUTPUT

(4-20mA, etc.)

PRECISE ENGINEERED ROLLERS

Two CNC precision machined squeeze rollers and two alignment rollers for optimum squeeze, unparalleled accuracy, and extended tube life.

EASY ACCESS

No tools required for pump head cover removal during routine maintenance.

PUMP HEAD COVER

Clear acrylic annealed for added strength and chemical resistance.

INNOVATIVE HEAVY DUTY ROTOR

Single piece plastic rotor means no flexing and increased accuracy with no metal springs or hinges to corrode. The pump can handle the same maximum pressure in either direction (clockwise or counter clockwise).

THREE POSITION PUMP HEAD ROTATION

Left, right, down facing.

TUBING MATERIAL OPTIONS

Norprene®, Tygothane® and Norprene® Chemical.

CHEMICAL RESISTANT FITTINGS

Natural PVDF for optimum chemical resistance and fluid purity.

Flex-Pro® A2

PERISTALTIC METERING PUMP

ProSeries
METERING PUMPS
**PRECISION
CHEMICAL
METERING**



IP66

NEMA 4X
WASH DOWN

TFD system
Tube Failure Detection
Patents 7,001,153 & 7,284,964

CE 

THE FLEX-PRO® MODEL A2 is the most compact of the Flex-Pro® Peristaltic line of metering pumps. Don't let the compact size mislead you, the A2 is capable of handling the aggressive, high viscosity fluid used in the treatment of water and waste water.

Flex-Pro® A2 is an excellent alternative to Solenoid pumps because peristaltic pumps provide more gentle and efficient pumping action. There are no costly rebuild kits required, ever. The A2's frame is ruggedly built and feature-packed, it includes easily accessible advanced electronics, a variable speed DC motor and exclusive Flex-Pro® features, such as patented built-in Tube Failure Detection.

The combined features and capabilities of the Flex-Pro A2 make it an excellent metering pump choice in several applications. The need to purchase several different pumps to service the one installation is often eliminated by choosing Flex-Pro A2.



ACCESSIBLE ELECTRONICS

- Color-coded overlay on the terminal block makes connections fast and efficient by clearly identifying terminals: Input, Output and Power Supply.
- Equipped with water tight connectors.
- Smart electronics: Profibus, Ethernet, Etc. available; SCADA ready; upgradeable firmware.

ELECTRONIC INTERFACE

- Operator friendly touchpad with menu driven software.
 - Features a one button prime mode
- VGA Graphic Multi-Color backlit LCD Displays:
 - Motor speed
 - Input signals
 - Percent speed
 - Service and alarm status



A2 FEATURES

- Heavy duty single piece rotor.
- Accepts FVS (Flow Verification Sensor) Alarm to monitor chemical injection failure.
- Patented TFD: Senses tube failure by detecting conductive non-compatible chemical in pump head. No false triggering. Patent Numbers 7,001,153 and 7,284,964.

More information on safety and monitoring system features found on page 12.

FLUIDS

- Chlorine, Caustic, Alum, Acid, Ferric chloride, Sodium Bisulfite, Ink, Dye, Sludge, Slurry, Flocculent and other fluids.

Customers are required to do their own compatibility testing. Tube selection guide can be viewed on page 13.

TUBING

Choose from multiple pump tube sizes and material options:

- Norprene®, Norprene® Chemical and Tygothane®.
- Specially engineered tubing for long life at high pressures. Meets FDA 21 CFR requirements for food contact applications.



TECHNICAL SPECIFICATIONS

OUTPUT FEED RATES

Minimum .02 Gallons per Hour (.07 LPH)

Maximum 17.2 Gallons per Hour (65.1 LPH)

PRESSURE

Maximum 125 PSI (8.6 bar) (Norprene tubing)

Maximum suction lift: 30ft @ sea level (14.7 ATM PSI)

CONTROL OPTIONS

SCADA INPUTS

- Scalable 4-20mA.
- Frequency, AC Sine Wave, TTL, CMOS.
- Flow Verification Sensor.
- Remote start/stop (Wet 6-24 VDC and Dry non-powered Contact options).

OUTPUT

- 4-20mA (optional).
- Relay (3AMP).
- Open Collector Motor Active.

Communication interface available:

Profibus DPV1, Modbus RTU, Modbus TCP, Industrial EtherNet/IP, Profinet RT I/O. Communication interface only available with the 4-20mA option.

MOTOR

Variable speed DC motor.

MOTOR SPEED ADJUSTMENT RANGE

100:1 (1.0%–100% motor speed), (1.3–130RPM).

DIMENSIONS

Height 10.25" (26 cm)

Width 7.5" (19 cm)

Depth 14" (35.6 cm)

Weight 28.4 lbs. (12.9 kgs)

ENVIRONMENT

NEMA 4X (IP66) Washdown duty.

Flex-Pro® A3

PERISTALTIC METERING PUMP



ProSeries
METERING PUMPS
**PRECISION
CHEMICAL
METERING**

IP66

NEMA 4X
WASH DOWN

TFD system
Tube Failure Detection
Patents 7,001,153 & 7,284,964



THE FLEX-PRO® A3 PERISTALTIC METERING PUMP is designed to handle the demands of mid-range to large volume water and wastewater treatment applications, as well as many other applications where precision chemical feed is sought.

The A3 has a broad range of feed rates, a 2500:1 turndown ratio, and is capable of injecting a comprehensive spectrum of chemicals. Combined with exceptional overmolded pump tubes and advanced electronics, the A3 can be finely tuned for a custom fit in a number of processes, and for use in multiple applications at a single facility.

Peristaltic technology ensures smooth, quiet, low-velocity and eco-friendly pumping action, and the A3's rugged design ensures it will handle the demanding requirements of industrial use.

ACCESSIBLE ELECTRONICS

- A color-coded overlay on the terminal block helps to make connections fast and efficient, by clearly identifying the terminals: Input, Output and Power Supply.
- The Terminal Box is equipped with water tight connectors.

ELECTRONIC INTERFACE

- The operator friendly touchpad with menu driven software features a one button prime mode.
- VGA Graphic Multi-Color (RGB) backlit LCD Displays:
 - Remote/ local control status
 - Motor speed
 - Output rate
 - Input signals
 - Service and alarm status



A3 FEATURES

- Heavy duty single piece rotor.
- Automated PPM chemical dosing system.
- **Security:** Password protection.
- Three possible pump head position placements: Left, right, down facing.
- **Patented Safety Switch** (See page 12 for details).
- **Patented TFD System** (See page 12 for details).
- **Patent on extended tube life** (See page 12 for details).

For additional information on monitoring features please see page 12.

FLUIDS

- Chlorine, Caustic, Alum, Acid, Ferric chloride, Sodium Bisulfite, Ink, Dye, Sludge, Slurry, Flocculent and other fluids.

Customers are required to do their own compatibility testing.
Tube selection guide can be viewed on page 13.

TUBING

Choose from multiple pump tube sizes and material options:

- Pump Head tubing material options are: Norprene®, Norprene® Chemical and Tygothane®.
- Pump Head Tubing is specially engineered for long life at high pressures. All tubing meets FDA 21 CFR requirements for food contact applications.



TECHNICAL SPECIFICATIONS

OUTPUT FEED RATES

Minimum .001 Gallons per Hour (.003 LPH)

Maximum 33.3 Gallons per Hour (126 LPH)

PRESSURE

Maximum 125 PSI (8.6 bar)

Maximum suction lift: 30ft @ sea level (14.7 ATM PSI)

CONTROL OPTIONS

SCADA INPUTS

- Scalable 4-20mA.
- Frequency, AC Sine Wave, TTL, CMOS.
- 0-10V DC.
- Flow Verification Sensor.
- Remote start/stop (Wet 6-24 VDC and Dry non-powered Contact options).

OUTPUT

- 4-20mA.
- Frequency Open Collector.
- Relay (250V/6AMP).
- Three 115V/1A contact closures assignable to monitor up to 17 pump functions (including TFD, FVS, remote/local control setting, motor on, fault, current operating mode and more).

MOTOR

No maintenance, brushless, variable speed motor.

MOTOR SPEED ADJUSTMENT RANGE

2500:1 (0.04%–100% motor speed).

DIMENSIONS

Height 10.75" (27.3 cm)
Width 8.125" (20.6 cm)
Depth 15.25" (38.9 cm)
Weight 33 lbs. (15 kgs)

ENVIRONMENT

NEMA 4X (IP66) Washdown duty.

Flex-Pro® A4

PERISTALTIC METERING PUMP

ProSeries
METERING PUMPS
**PRECISION
CHEMICAL
METERING**



IP66

NEMA 4X
WASH DOWN

TFD system
Tube Failure Detection
Patents 7,001,153 & 7,254,881

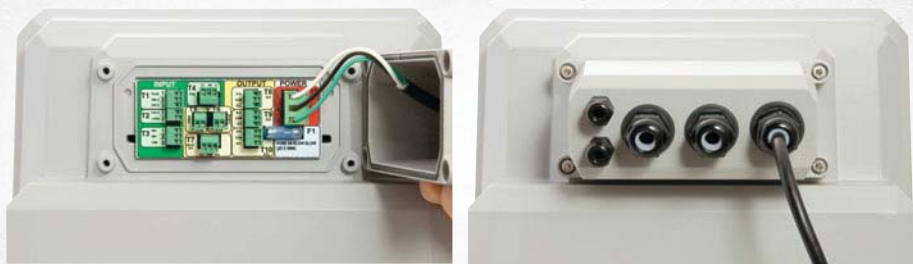


**THE HEAVY DUTY
FLEX-PRO® A4 IS
THE LARGEST OF
THE PROSERIES® PERISTALTIC**

METERING PUMP LINE. The A4 combines technology and features that high output demand water and wastewater treatment systems require, while maintaining an operator-friendly design for ease of use.

The A4 can meter up to 158 GPH / 10,000 ML/Min of chemical while retaining the smooth, quiet and eco-friendly pumping action for which Flex-Pro® pumps are known. The Flex-Pro's two CNC precision machined squeeze rollers and two alignment rollers, provide optimum squeeze, and combine with the heavy duty single piece plastic rotor to provide unparalleled accuracy and long tube life.

When your installation calls for high volume chemical output combined with the latest design and engineering features, choose Flex-Pro® A4.



ACCESSIBLE ELECTRONICS

- A color-coded overlay on the terminal block makes connections fast and efficient, by clearly identifying the terminals: Input, Output and Power Supply.
- The Terminal Box is equipped with water tight connectors.

ELECTRONIC INTERFACE

- The operator friendly touchpad with menu driven software, features a one button prime mode.
- VGA Graphic Multi-Color (RGB) backlit LCD Displays:
 - Remote/ local control status
 - Motor speed
 - Output rate
 - Input signals
 - Service and alarm status



A4 FEATURES

- Heavy duty single piece rotor.
- Automated PPM chemical dosing system.
- **Security:** Password protection.
- The motor can run in reverse (counter-clockwise).
- **Patented Safety Switch** (See page 12 for details).
- **Patented TFD System** (See page 12 for details).
- **Patent on extended tube life** (See page 12 for details).

For additional information on monitoring features please see page 12.

FLUIDS

- Chlorine, Caustic, Alum, Acid, Ferric chloride, Sodium Bisulfite, Ink, Dye, Sludge, Slurry, Flocculent and other fluids.

Customers are required to do their own compatibility testing.

Tube selection guide can be viewed on page 13.

TUBING

Choose from multiple pump tube sizes and material options:

- Pump Head tubing material options are: Norprene®, Norprene® Chemical and Tygothane®
- Pump Head Tubing is specially engineered for long life at high pressures. All tubing meets FDA 21 CFR requirements for food contact applications.



TECHNICAL SPECIFICATIONS

OUTPUT FEED RATES

Minimum .01 Gallons per Hour (.04 LPH)

Maximum 158.5 Gallons per Hour (600 LPH)

PRESSURE

Maximum 125 PSI (8.6 bar)

Maximum suction lift: 30ft @ sea level (14.7 ATM PSI)

CONTROL OPTIONS

SCADA INPUTS

- Scalable 4-20mA.
- Frequency, AC Sine Wave, TTL, CMOS.
- 0-10V DC.
- Flow Verification Sensor.
- Remote start/stop (Wet 6-24 VDC and Dry non-powered Contact options).

OUTPUT

- 4-20mA.
- Frequency Open Collector.
- Relay (250V/6AMP).
- Three 115V/1A contact closures assignable to monitor up to 17 pump functions (including TFD, FVS, remote/local control setting, motor on, fault, current operating mode and more).

MOTOR

No maintenance, brushless, variable speed motor.

MOTOR SPEED ADJUSTMENT RANGE

2500:1 (0.04%–100% motor speed).

DIMENSIONS

Height 14.25" (36.1 cm)

Width 12.125" (30.8 cm)

Depth 18.625" (47.3 cm)

Weight 58 lbs. (26.3 kgs)

ENVIRONMENT

NEMA 4X (IP66) Washdown duty.

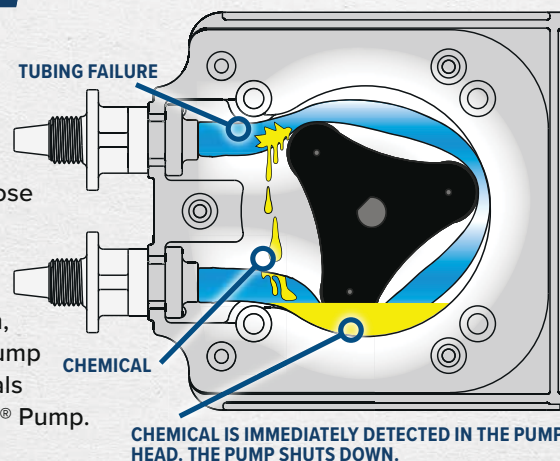
Flex-Pro[®] PATENTED FEATURES

TFD system Tube Failure Detection

TUBE FAILURE DETECTION SYSTEM

(Patent Numbers 7,001,153 and 7,284,964)

Blue-White's exclusive Tube Failure Detection system – no one comes close to matching the breakthrough technology of Blue-White's exclusive Tube Failure Detection System. In fact, the TFD may be the most important patent ever awarded for peristaltic pumps. If the TFD senses tube failure, the pump will automatically shut off and energize a relay or switch, permitting communication with external equipment, such as a back-up pump or alarm. The TFD System will detect a wide range of conductive chemicals with no false triggering. Simple, efficient and BUILT-IN to every ProSeries[®] Pump.



COMPONENT CONTROL SYSTEM (Patent No. 8,639,363)

A method used to control two or more positive displacement pumps in a system. The Component Control System ensures that two or more positive displacement pumps, operating in a system together, will run only if all pumps in the system are running. This can reduce costs by eliminating the need for separate pump controllers for each unit. This feature will be particularly important when failure of one pump to meter the chemical could have a damaging effect on the entire process, for example; when pumping two or more chemicals into a system using multiple pumps, particularly when two or more chemicals rely on one-another to achieve desired results (i.e. Chemical reaction).

This new patented feature is currently available on Blue-White's Flex-Pro[®] A3 and A4 Metering Pumps.

METHOD OF EXTENDING TUBE LIFE (Patent No. 8,418,364)

The Method comprises switching the inlet and outlet connections of the peristaltic pump, and reversing the rotational direction of the roller assembly, thereby moving the wear point of the tube which results in approximately double the useful life of the tubing.

The patent includes: Identify usage information of the tubing of the peristaltic pump, and ability to stop the pump automatically after a certain number of rotor revolutions.

Implementation of the method discussed above can also result in cost and time savings. Clearly, by extending the life of the tubing, replacement costs are substantially decreased. However, implementing such a method can also save production and replacement time that would otherwise be sacrificed in maintaining the system. Included on all Flex-Pro[®] pumps.

SAFETY SWITCH (Patent No. 8,215,931)

Protects the pump operator when performing maintenance to the pump head, such as changing the pump tube. The switch stops the pump when the front cover is removed. The pump will only operate in maintenance mode while the front cover is removed, helping to ensure operator safety. Included on all Flex-Pro[®] pumps.

Flex-Pro[®] FLOW VERIFICATION SYSTEM



FVS (FLOW VERIFICATION SENSOR) READY

The FVS is an external, optional paddlewheel sensor which can be connected to the pumps' inlet for monitoring chemical injection. If chemical should fail to inject, the pump will stop and an alarm relay will engage, allowing for remote alarm indication, or for initiation of a backup metering pump.



Flex-Pro[®] TUBING AND CHEMICAL RESISTANCE CHART



FDA 21 CFR: Tubing meets requirements for food contact applications.

Available Tubing Options for Flex-Pro[®] Metering Pumps are:

Norprene[®], Norprene[®] Chemical, and Tygothane[®]

NORPRENE[®] TUBING

Meets FDA criteria for food • *Excellent* chemical resistance

Alcohol general	Ferrous chloride - 43% in water	Polyaluminum Chloride (PAC)
Aluminum Sulfate (Alum)	Ferrous sulfate	Potassium hydroxide
Ammonium chloride	Fluosilic Acid (up to 25%)	Propylene glycol
Ammonium hydroxide	Formic acid	Sodium hydroxide 50%
Benzyl alcohol	Glucose	Sodium bisulfite
Bleach	Hydrochloric acid 33%	Sodium chlorite 12%
Brine solutions	Hydrocyanic acid	Sodium hypochlorite 12.5%
Calcium hydroxide	Hydrogen peroxide	Sodium sulfide
Calcium hypochlorite 20%	Hypochlorous acid	Sulfuric acid (up to 50%)
Citric Acid	Iodine	Tannic acid
Ethylene glycol	Magnesium chloride	
Ferric chloride	Magnesium sulfate	
Ferric nitrate	Phosphoric acid	
Ferric sulfate	Plating solutions	

NORPRENE[®] CHEMICAL TUBING

Ultra smooth plasticizer-free bore (inner Linder)

Meets FDA criteria for food • *Superior* chemical resistance

Ferrous chloride (up to 40%)	Salts
Fluoboric acid (up to 48%)	Ketones
Fluosilicic acid (up to 25%)	Alcohols:
Hydrofluoric acid (up to 48%)	Isobutyl Alcohol
Nitric Acid (up to 71%)	Applications
Phosphoric acid (up to 85%)	Ink and solvent production
Potassium hypochlorite (up to 70%)	Battery acid filling
Sodium phosphate (up to 30%)	Specialty chemical production / processing
Sulfuric acid (up to 98%)	Sensitive fluid transfer
Bases	

TYGOTHANE[®] TUBING

Meets FDA criteria for food

Resistant to oils, greases and fuels

Tygothane [®]
Cyclohexane
Diesel Fuel
Fatty acids
Gasoline
Heptane
Hexane
Kerosene
Lard
Mineral spirits
Soap solutions

These are guidelines. Customers should do their own compatibility testing.

Flex-A-Prene®

Heavy-Duty Peristaltic Pump Tubing

Flex-A-Prene® Dual Tube Technology for Precision Chemical Metering and Long Service Life, Even at High Pressures

Flex-A-Prene® is uniquely engineered and designed for optimum performance even in high pressure installations, up to 110PSI.

With precise chemical metering, and unmatched tube life of up to four times longer than conventional tubing designs, the over mold tube design cuts down on regular pump maintenance and replacement cost.

The exclusive clamp-less tube fitting is available with multiple connection types including: 1/2" M/NPT; barb fitting; and 3/8" tube compression, tri-clamp and quick disconnect.

Permanently printed model numbers can be viewed through the pump head cover, even while the pump is running, making for quick and easy recognition and re-order. The Flex-A-Prene pump tube will retrofit Flex-Pro A2 and A3 units now in service. For Pumps manufactured prior to January 27th, 2015 simply purchase the new clear pump head cover.



Chem-Pro® DiaFlex® PVDF DIAPHRAGMS for Precision Chemical Feed and Optimum Performance

The DiaFlex® diaphragm features an innovative single layer design, unlike the multiple layers of traditional diaphragms. The all PVDF composition of both the pump head and the diaphragm ensures excellent chemical compatibility.

DiaFlex® experiences zero breakdown or delamination, helping to keep field maintenance and down time to a minimum.

The Exclusive DiaFlex® with Patent Pending design, is currently available in four sizes to accommodate varying flow rates.

The DiaFlex® PVDF Diaphragms will retro-fit ProSeries® Chem-Pro® pumps now in service, making switching to this high performance diaphragm a simple in-field upgrade.

The innovative DiaFlex® diaphragm is manufactured 100% in-house to ensure deliver of a high quality product every time.



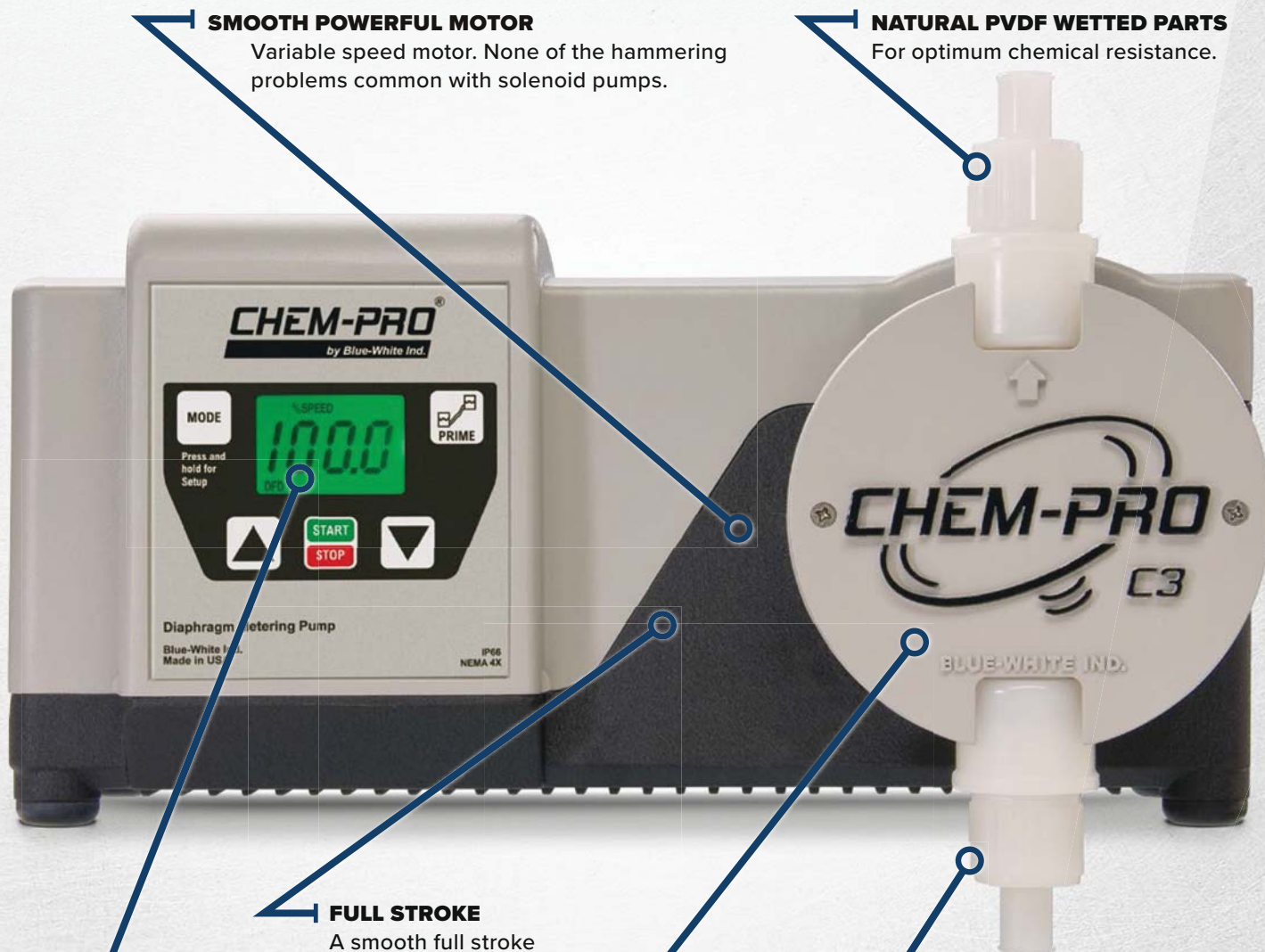
What makes **Chem-Pro®** a Superior Diaphragm Metering Pump? Leading Edge Features and Materials.

SMOOTH POWERFUL MOTOR

Variable speed motor. None of the hammering problems common with solenoid pumps.

NATURAL PVDF WETTED PARTS

For optimum chemical resistance.



FULL STROKE

A smooth full stroke everytime helps reduce the risk of vapor lock.

BACKLIT LCD

It's ultra-bright for excellent readability.

DOUBLE BALL VALVES

Oversized for increased accuracy — less susceptible to clogging.



**PVDF DIAPHRAGM:
PATENT PENDING**

- Single piece injection molded design with zero breakdown or delamination, reducing field maintenance requirements and down time.
- Pump head: PVDF head and diaphragm and FKM or EP o-rings, are the only wetted material in the Chem-Pro® pump head. This reduces issues of chemical compatibility.
- Manufactured 100% in-house exclusively for use on Chem-Pro® Diaphragm Metering Pumps.

Chem-Pro® C1 DIAPHRAGM METERING PUMP

C2



ProSeries®
METERING PUMPS
**PRECISION
CHEMICAL
METERING**

IP66

**NEMA 4X
WASH DOWN**

DFD system
Diaphragm Failure Detection

CE 

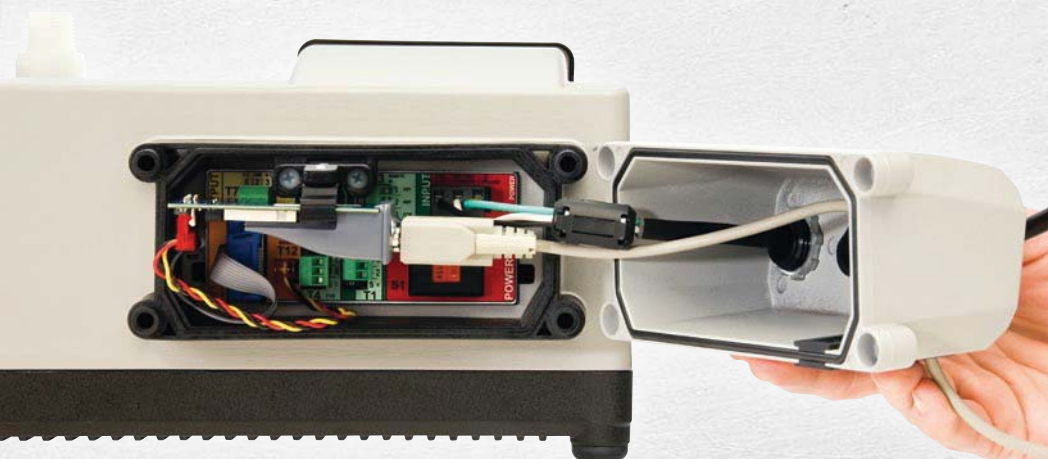
CHEM-PRO® C2 AND C3 DIAPHRAGM METERING PUMPS provide superior chemical resistance and precision chemical metering capabilities. The C2 and C3 are designed to provide excellent service in a wide range of applications.

The Chem-Pro's thoughtfully engineered design begins with a substantial control pad that's easy to use and highly intuitive. A protective snap-on polycarbonate cover protects the LCD control pad from UV and the elements. The Chem-Pro® PVDF pump head is designed to provide unparalleled service and precision feed with large double ball ceramic valves.

The large single piece Junction Box provides quick access to the terminal block connectors, and includes additional ports for external wiring, such as; Profibus, Ethernet, Etc. Some additional Chem-Pro® features and benefits include: A remote Start/Stop function; feed rate resolution to 0.1% and a rugged Variable Speed Drive.

SERIAL AND ETHERNET COMMUNICATIONS

- Large single piece junction box with terminal block connectors inside (40% more room).
- SCADA Ready (Requires C2V, or C3V control options): Smart communications: Ethernet, Profibus etc.
Communication connection shown below



FLUIDS

- Chlorine, Acid, Caustic, Alum, Ferric Chloride, Sodium Bisulfite, Ink, Dye and Flocculent and other fluids.

Customers are required to do their own compatibility testing.

ELECTRONIC INTERFACE

- The operator friendly touchpad with menu driven software features a one button prime mode.
- VGA Graphic Multi-Color backlit LCD Displays:
 - Motor speed
 - Input signals
 - Service and alarm status

CHEM-PRO® FEATURES

- Smooth chemical feed- no hammering as seen with solenoid pumps.
- Increased feed rate resolution to .1% (1-100% feed rate in .1% increments).
- Remote start/stop standard.
- Smooth, Full stroke every time avoids vapor-lock.
- Display in % motor speed.
- Upgradeable firmware.
- Large PVDF, ceramic, TFE/P double ball check valve without metal springs.
- Compatible with FVS (Flow Verification Sensor) System; Alarm Relay monitors chemical injection failure.

TECHNICAL SPECIFICATIONS

OUTPUT FEED RATES

- C2** Minimum .08 GPH (.31 LPH)
Maximum 21 GPH (78 LPH)
- C3** Minimum .25 GPH (.96 LPH)
Maximum 40 GPH (153 LPH)

PRESSURE

- C2** Maximum 175 PSI (10.3 bar)
Maximum suction lift: 15ft / Water, 0 PSI (4.5 m, 0 bar)
- C3** Maximum 150 PSI (10.3 bar)
Maximum suction lift: 15ft / Water, 0 PSI (4.5 m, 0 bar)

CONTROL OPTIONS

SCADA INPUTS

- Scalable 4-20mA.
- Frequency, AC Sine Wave, TTL, CMOS.
- Flow Verification Sensor.
- Remote start/stop (Wet 6-24 VDC and Dry non-powered Contact options).

OUTPUT

- 4-20mA (optional).
- Relay (3AMP).
- Open Collector Motor Active.

Communication interface available:

Profibus DPV1, Modbus RTU, Modbus TCP, Industrial EtherNet/IP, Profinet RT I/O. Communication interface only available with the 4-20mA option.

MOTOR

Continuous duty cycle, variable speed DC motor.

- C2** 166 strokes/min
- C3** 130 strokes/min

MOTOR SPEED ADJUSTMENT RANGE

1–100% in 0.1% increments.

DIMENSIONS

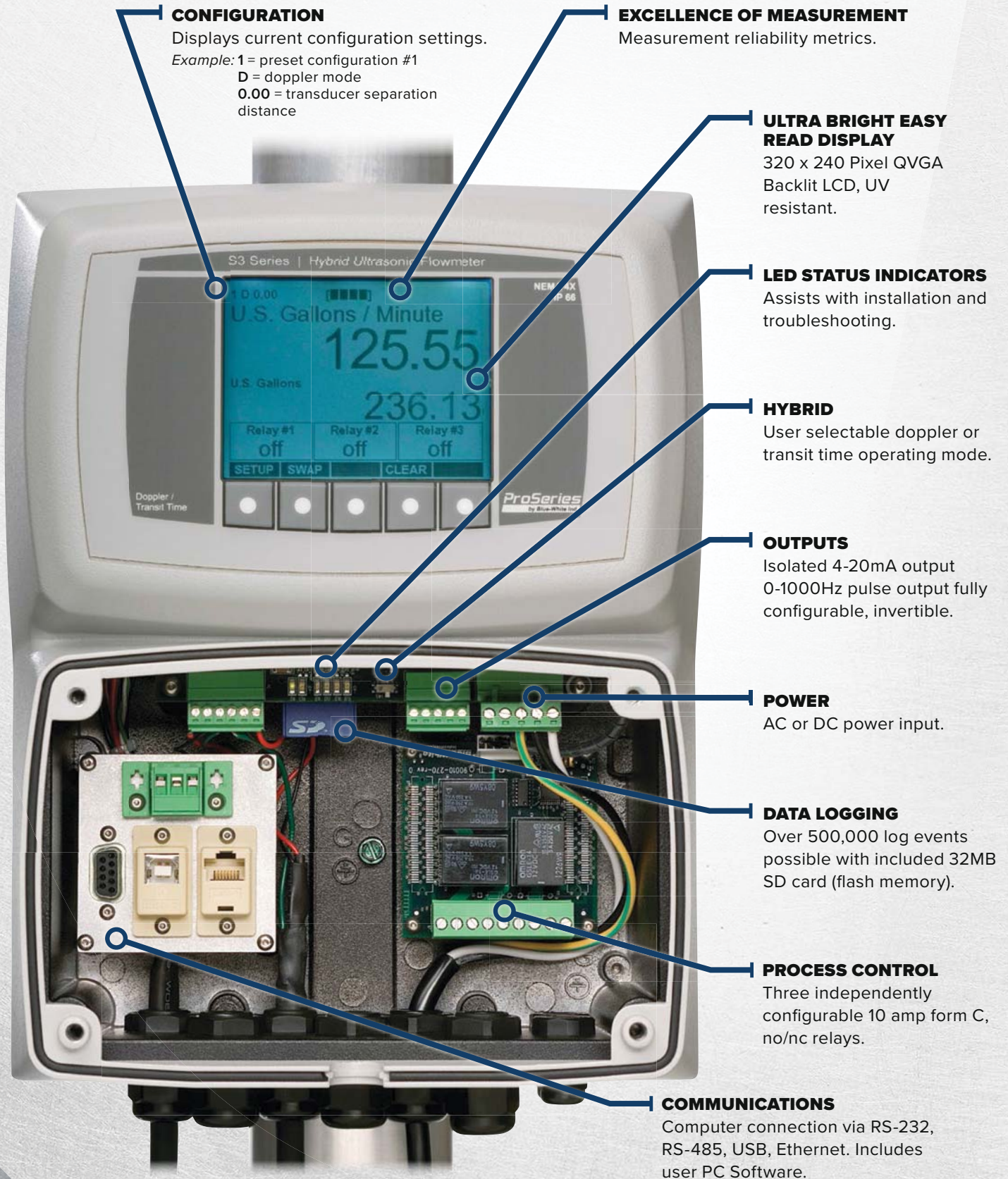
- C2** Height 7.75" (19.7 cm)
Width 11.75" (29.8 cm)
Depth 10.75" (27.4 cm)
Weight 24 lbs. (10.9 kgs)
- C3** Height 9" (22.8 cm)
Width 13.125" (33.3 cm)
Depth 10.75" (27.4 cm)
Weight 29 lbs. (13.15 kgs)

ENVIRONMENT

NEMA 4X (IP66) Washdown duty.

What makes **Sonic-Pro**® a Superior Ultrasonic Flowmeter?

Hybrid Operation. Ultrasonic Transducers.



Sonic-Pro®

HYBRID ULTRASONIC FLOWMETER

HYBRID ULTRASONIC FLOWMETER

S1 S2 S3



IP66

**NEMA 4X
WASH DOWN**



ProSeries
FLOWMETERS
**PRECISION
FLOW
MONITORING**

SONIC-PRO
BLUE-WHITE RD

SONIC-PRO® HYBRID ULTRASONIC FLOWMETERS is can be used in Doppler or Transit Time operation modes. Sonic-Pro® will measure fluid flow in virtually any fluid in which sound waves can travel.

Because the ultrasonic sound transducers are clamped to the outside of the pipe wall, the Sonic-Pro® can be used to measure flow in both clean and dirty fluids. In addition, because the meter does not come in contact with the fluid being measured, Sonic-Pro® is well suited for use in applications where harsh chemicals and other abrasive fluids are being used.

The meter can be equipped with a communications package for PC remote access allowing for program editing and downloading of data logs. Additionally, a relay package is available for process control and alarm functions.



AVAILABLE DISPLAY OPTIONS

S1 No local display. Factory configured for one application. Communication package required to access configuration menu and data log.

S2 High quality 320 x 240 pixel QVGA backlit LCD display. Two button interface, allows user access to clear accumulated total and swap rate and total display fonts. Communication package required to access configuration menu.

S3 High quality 320 x 240 pixel QVGA backlit LCD display. Five button, fully configurable, tactile switch keypad interface. Security: master and configuration passwords.

FLUIDS

- Sewage
- Wastewater
- Pulp and Paper Slurries
- DI water
- Discharge water
- Caustics
- Chemical Slurries
- Ground water
- Food and Beverage
- Petrochemical
- Any sound conducting liquid

PATENTED T-TRACK MOUNTING SYSTEM FOR FAST AND EFFECTIVE INSTALLATION

- Designed to quickly and accurately mount transducers utilizing a built-in ruler and mounting base to ensure transducers are perfectly aligned and spaced. U.S. Patent number 9,374,024.
- Heavy gauge Stainless Steel cover, anodized aluminum end blocks, and polymeric tensioning clamps provide transducer protection for years of service in tough environments.

SINGLE T-TRACK

- For V-Mount method.
- Available for two pipe ranges: .5" to 4" and 2" to 14".



DUAL T-TRACK

- For V or Z-Mount method.
- Capable of allowing additional signal strength.
- Available for 2" to 24" pipe.



TECHNICAL SPECIFICATIONS

PIPE

T-Track fitting allows for small pipe diameter capabilities (.5"–24").

Pipe size range .5"–100".

FLUID

DOPPLER MODE: Requires particles to be present in the flow stream to "reflect" the sound waves. (ie. Air bubbles, sand, etc.)

Operational Environment: fluid contains .02%–15% (200–150,000 ppm) of particles.

TRANSIT TIME MODE: Requires relatively "clean" fluid to enable the sound waves to complete a circuit.

Operational Environment: 0%–10% (0–100,000 ppm) of particles.

ACCURACY

+/- 1% of rate in Transit-Time mode greater than 1 ft/sec fluid velocity.

+/- 0.01 ft/sec in Transit-Time mode less than 1 ft/sec fluid velocity.

+/- 2% of rate in Doppler mode greater than 5 ft/sec fluid velocity.

+/- 0.10 ft/sec in Doppler mode less than 5 ft/sec velocity.

INTERFACE AND DATA

Data logging to standard SD Card supplied with unit. User configurable to time interval, flow rate and total set-point triggers. 500,000 events with included 32MB SD Card.

Optional Computer Connection: Ethernet, USB, RS-232, RS-485. Permits remote access and control of all functions including real-time display, system configuration, data logging, remote data capture as well as process control functions. Software permits remote internet access through local network setup.

Optional Process Control: Three independently configurable 10 amp, form C relays. May be configured to flow rate or high/low rate alarm.

- 4-20mA output: Fully configurable
- 0-1000Hz Pulse Output: Fully configurable

DIMENSIONS

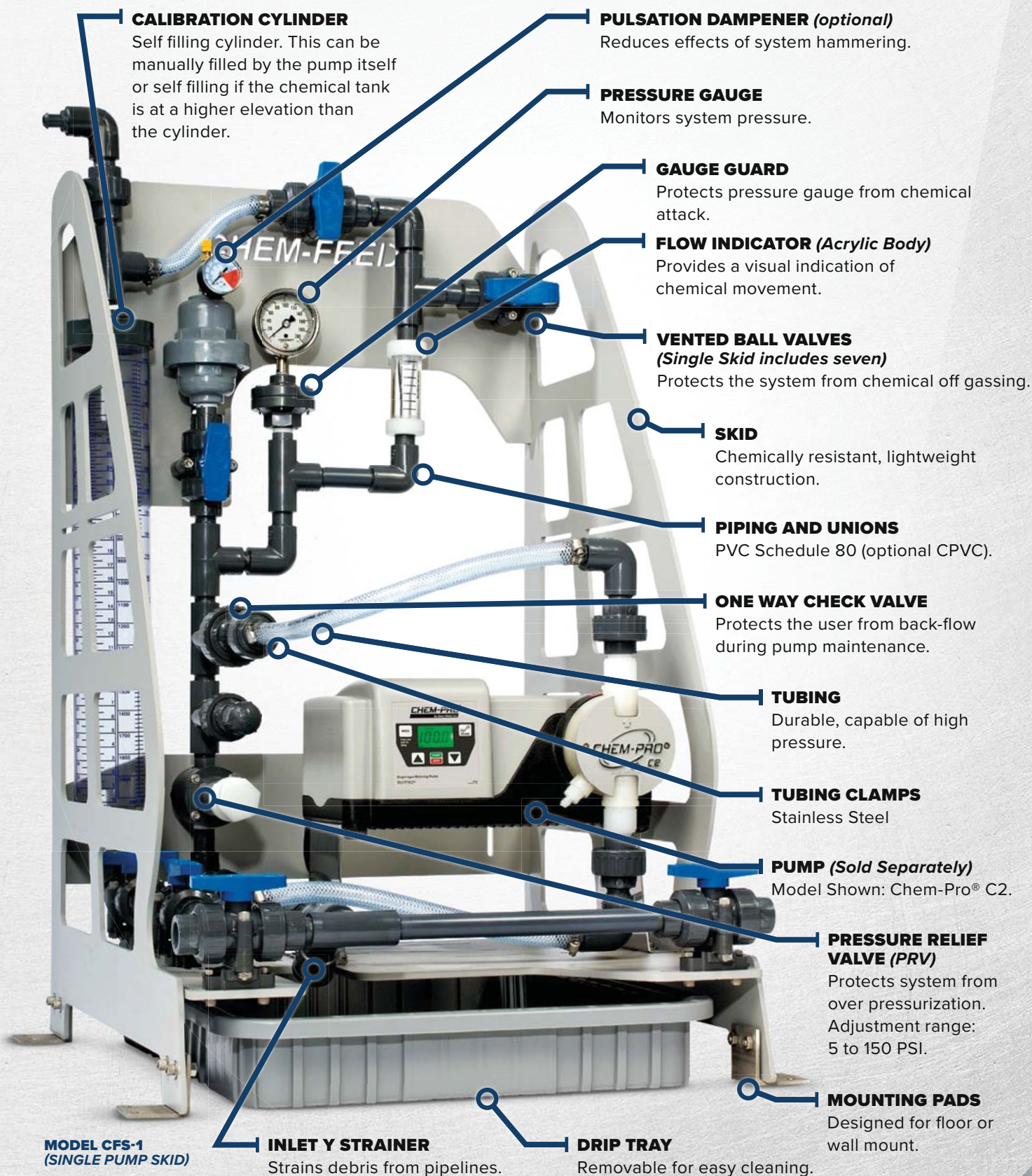
		Shipping Dimensions
Height	11" (27.9 cm)	21"
Width	8.5" (21.8 cm)	17"
Depth	5" (12.7 cm)	9.5"
Weight	24 lbs. (10.9 kgs)	

Includes carry case, Excludes T-Track fixture.

ENVIRONMENT

NEMA 4X (IP66), Powder Coated aluminum, SS clamps and hardware.

What makes **CHEM-FEED**® a Superior System? Exceptional Quality. Easy Maintenance.



MODEL CFS-1
(SINGLE PUMP SKID)

CHEM-FEED® CFS-1 SINGLE AND DUAL PUMP SKIDS CFS-2



**MODEL CFS-2
(DUAL PUMP SKID)**

THE VERSATILE AND LIGHTWEIGHT CHEM-FEED® ENGINEERED SKID SYSTEM was designed and Engineered using solid modeling tools, resulting in superior quality and ease of maintenance.

Units for single or dual metering pump configurations are offered. They're designed to accommodate all ProSeries® Metering Pumps either Chem-Pro® Diaphragm units, or Flex-Pro® Peristaltic units.

The Skid structure is heavy duty and chemical resistant powder coated 6061-T6 aluminum with welded joint construction. With the Systems' efficient small footprint design, chemical injection is kept compact and organized, making it ideal for space-limited facilities.

CHEM-FEED SKID FEATURES

- Efficient, Small footprint Design.
- The pre-fabricated design allows for easy installation, simply drop the Skid System in place and make your connections. Each system is rigorously factory tested.
- Easy access to wiring components from the rear of the system.
- Joints use Weld-On 724 solvent cement which is chemically resistant to Sodium Hypochlorite and other chemicals.
- Dual side inlets enable connection of multiple skids to the same inlet.
- The Dual Skid is capable of simultaneous chemical injection of different or like chemical; or one pump can be used as a back-up pump sitting in standby.
- Single and Dual Skid Systems are offered with many factory options. Custom modifications are not available.

CHEM-FEED® SKID APPLICATIONS

- Municipal Water Treatment
- Municipal Wastewater Treatment
- Chemical Metering
- Chlorination
- Fluoridation
- Flocculants
- Alum
- Sodium Bisulfate/ Bisulfite
- Hydrochloric Acid
- Polymers
- Caustics

COMPONENTS

Vented Ball Valves

(Dual Skid includes eight) True unions, PVC body, PTFE shaft bearings and seats. FKM elastomers (optional EPDM). *Manufacturer: Plast-O-Matic®*

Pressure Relief Valve (PRV)

5–150 PSI setting range, 125 PSI max system pressure. PVC body (optional CPVC), PTFE primary diaphragm seal. *Manufacturer: Plast-O-Matic®*

One Way Check Valve

PVC Body (Optional CPVC), FKM diaphragm (optional EPDM). *Manufacturer: Plast-O-Matic®*

Flow Indicator

Machined cast acrylic, PVC connections, ceramic ball, polypropylene ball stop. Polypropylene half unions, FKM seals (optional EPDM).

Manufacturer: Blue-White Ind.®

Micro-Flo (optional)

Flow Verification Sensor for monitoring the system. Failure of Chemical to inject stops the pump, and triggers an alarm relay to start a back-up pump. PVDF body, PVC socket weld fittings. FKM elastomers (optional EPDM). Six Flow Ranges available. *Manufacturer: Blue-White Ind.®*

Calibration Cylinder (optional)

PVC clear body, PVC end caps, 1/4" ID tubing, outlet vent. Volume capacities: 1.6 GPH (100mL), 4 GPH (250mL), 8 GPH (500mL), 16 GPH (1,000mL), 32 GPH (2,000mL).

Pulsation Dampener (optional)

PVC body, 10 cubic inch volume, FKM bladder (optional EPDM bladder). *Manufacturer: Plast-O-Matic®*

Pressure Gauge with Guard (optional)

Liquid filled stainless steel with blowout plug, bottom mount, 1/4" NPT threads. PVC body (CPVC optional), FKM diaphragm seal. Available Pressure Ranges: 0–30 PSI, 0–100 PSI, 0–200 PSI.

Manufacturer: Plast-O-Matic®

TECHNICAL SPECIFICATIONS

CONSTRUCTION

Skid: Polyester powder coated 6061 T6 aluminum. Welded joint construction.

Mounting Pads: 316 Stainless Steel (non-wetted part).

Piping and Unions: PVC Schedule 80 (optional CPVC).

Inlet Y Strainer (optional): PVC body (optional CPVC), FKM elastomers (optional EPDM). Suggested for diaphragm pump applications.

Tubing: Reinforced braided PVC, 200 PSI max.

Tubing Clamps: 300 series SS band, 400 Series SS screw.

Drip Tray: Polypropylene, 4 gallon containment each tray.

PUMP (SOLD SEPARATELY)

Flex-Pro® model A2, A3 or A4 peristaltic pumps or Chem-Pro® model C2 or C3 diaphragm pump. *Manufacturer: Blue-White Ind.®*

DIMENSIONS

Single Pump Skid Units

Height	35" (88.9 cm)
Width	23.75" (60.3 cm)
Depth	24" (61.0 cm)
Shipping Wt.	60 lbs. (27.2 Kg)

Dual Pump Skid Units

Height	35" (88.9 cm)
Width	39.75" (101.0 cm)
Depth	24" (61.0 cm)
Shipping Wt.	70 lbs. (31.8 Kg)

NOTE: Skid Systems do not include pumps.

LIGHTWEIGHT!

DISTRIBUTION

ProSeries® is backed by a world wide distribution network committed to providing an unparalleled level of customer service including short lead times. Our distribution system is designed to expedite delivery of a cost-effective product.

LEAD TIME

Blue-White® products are shipped worldwide. Our manufacturing facility, located in Huntington Beach, California, puts us in close proximity to many shipping methods and major carriers. ProSeries® products are typically shipped within three to five days of receipt of order.

CUSTOMER SERVICE

In addition to our extensive distribution network, the ProSeries® is supported by a group of highly skilled and experienced regional representatives who are committed to ensuring your complete satisfaction. They can be called upon to assist you with any challenges you may have such as, locating a distributor, writing a specification, or solving a tough installation requirement. Our knowledgeable factory sales staff, engineers and technical support personnel are also available to assist you.

WARRANTY

The ProSeries® products are covered by a two year factory warranty. We are convinced these products will exceed expectations in your most demanding applications.

RATINGS AND COMPLIANCE

Enclosure:



NEMA 4X: Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, and corrosion; and that will be undamaged by the external formation of ice on the enclosure.



IP66: No ingress of dust, complete protection against contact. Water projected in powerful jets (12.5 mm nozzle) against the enclosure from any direction shall have no harmful effects.



FDA 21 CFR: Tubing meets requirements for food contact applications.



AGENCY LISTINGS

ETL: This pump is listed to conform to the following: UL Standard 778 as a motor operated water pump CSA Standard C22.2 as process control equipment.



CE: This pump complies to the Machinery Directive 98/37/EC, BS EN 60204-1, Low Voltage Directive 73/23/EC BS EN 61010-1, EMC Directive 89/336/EC, BS EN 50081-1/ BS EN 50082-1.

Blue-White® products provide money saving solutions in a wide range of the most demanding applications, including:

Water Treatment • Wastewater Treatment • Food and Beverage • Agriculture • Groundwater Remediation
Ultra-Pure Water • Oil and Gas Production • Plating • Mining • Pulp and Paper • Printing • Boiler Treatment • Textiles
Commercial Swimming Pools • Water Features and Water Parks • Car and Truck Washes

ProSeries[®]

METERING PUMPS

**PRECISION
CHEMICAL
METERING**

ProSeries[®] by Blue-White Ind.

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80000-422 Rev.3 © B/W - 02/17

