



QUOTATION		
DATE	NUMBER	PAGE
1/13/2026	0005506	1 of 1

B CIA004
I AUBURN UTILITIES
L PO BOX 506
L AUBURN, IN 467060506
T US
O

S AUBURN UTILITIES
H PO BOX 506
I AUBURN, IN 46706-0506
P

T
O

Accepted By: _____
Company: _____
Date: _____
PO#: _____
Ship To: _____

ATTENTION:

260-573-5474

Daniel Rabe <DERabe@ci.auburn.in.us>

Dan Rabe

WE ARE PLEASED TO PROPOSE THE FOLLOWING FOR YOUR CONSIDERATION:

TERMS: NET 30

CUSTOMER REF/PO#		JOB TITLE	SLP	SHIPPING TYPE	
Liquid Polymer		Auburn WWTP	DPB/DPB	BEST WAY	
QTY	PART	DESCRIPTION		UNIT PRICE	EXTENDED
1	MM3000-P15AB	PolyBlend Polymer System		\$43,975.00	\$43,975.00

SEE ATTACHED SCOPE FOR DETAILS

INCLUDES 1 DAY OF START-UP SERVICES

ESTIMATED DELIVERY: 12-14 WEEKS AFTER SUBMITTAL
APPROVAL

This quote is subject to and incorporates by reference BL Anderson Terms & Conditions and Customer Warranty available at www.blanderson.com which will be provided by email upon written request. Buyer expressly agrees to the provisions set forth in the Terms & Conditions and Customer Warranty posted on BL Anderson Company's website.

QUOTE VALID FOR 60 DAYS. CREDIT CARD PAYMENTS ARE SUBJECT TO AN ADDITIONAL 3%
CHARGE NO TAXES OF ANY KIND ARE INCLUDED IN THIS PROPOSAL

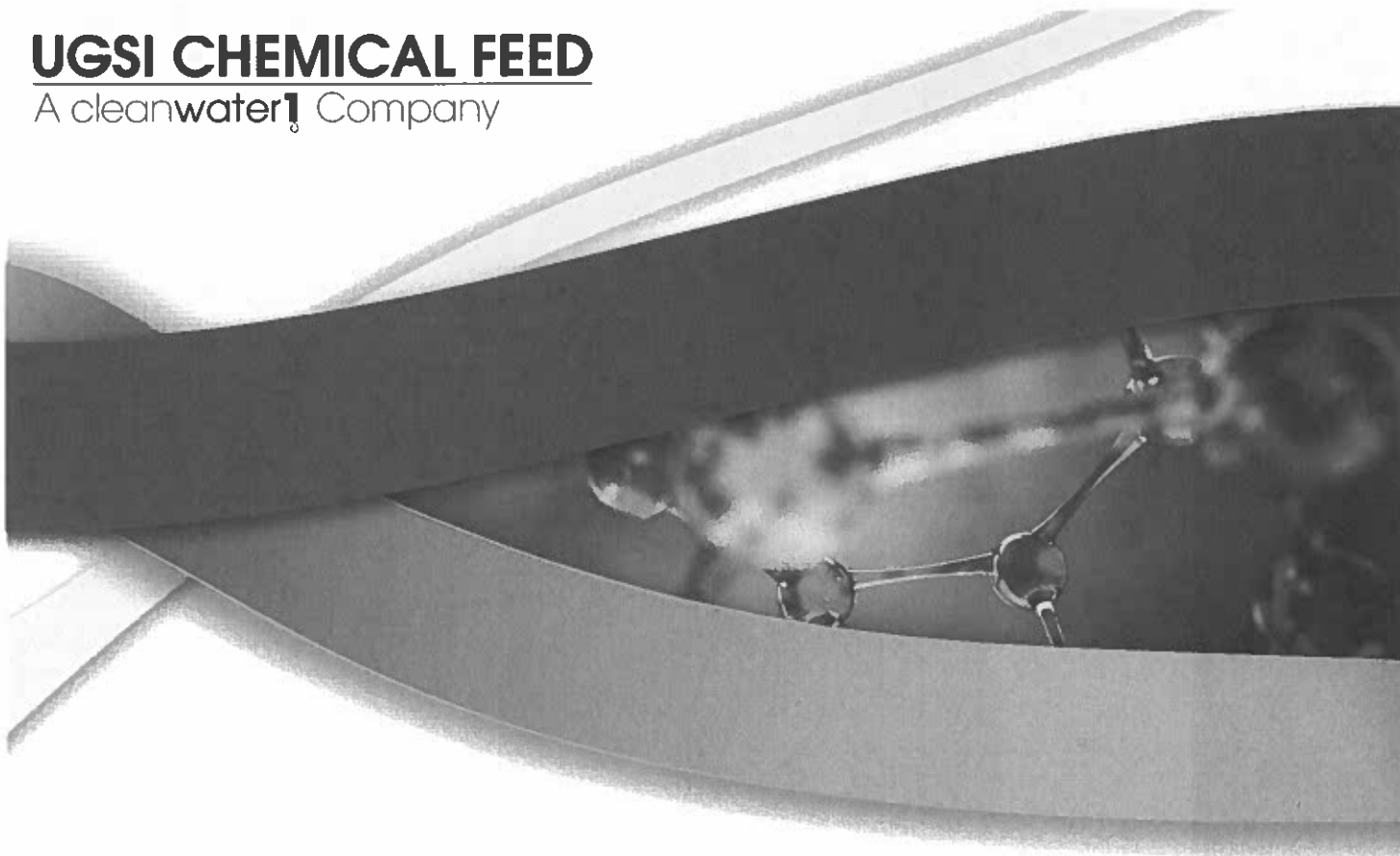
SUBTOTAL: \$43,975.00

4801 Tazer Drive Lafayette, IN 47905 - Phone: 765-463-1518 - Fax: 765-446-8390

www.blanderson.com

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BUDGET PROPOSAL

POLYBLEND® POLYMER BLENDING SYSTEM

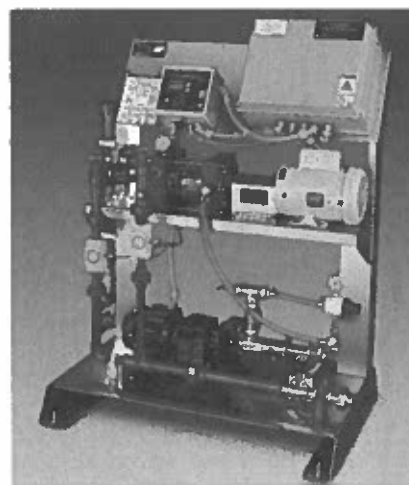
**For
Auburn IN - Replacement DP**

UGSI Chemical Feed, Inc.
File No.: 202510-44344-1

Prepared on: 10/16/2025

SALES REPRESENTATIVE

B.L. Anderson Company
Gary Prehm
4801 Tazer Drive
Lafayette, IN 47906
Tel: 765-463-1518
Email: gary@blanderson.com



Note: Picture may not exactly match proposed equipment

T: (855) 669-3845

M: info@cleanwater1.com

W: cleanwater1.com

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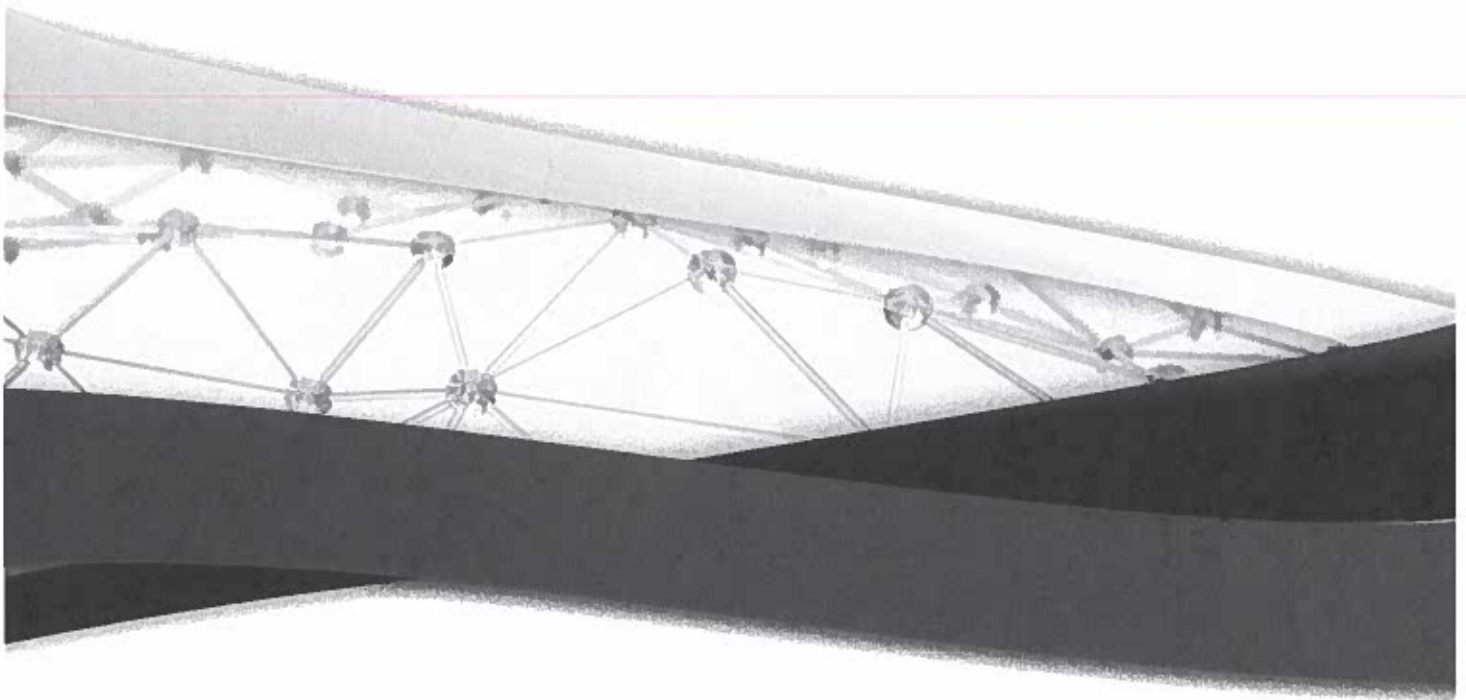
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Cover Letter

Section 1 Commercial Proposal

Section 2 Technical Information

Section 3 Brochure



IMPORTANT NOTICE: All the information in this Proposal is confidential and has been prepared for Buyer's use solely in considering the purchase of the Equipment described. Transmission of all or any part of this Proposal to others or use by Buyer for other purposes is unauthorized without Seller's advance written consent.

UGSI Chemical Feed, Inc. is part of the Cleanwater1 family of companies, which includes PSI, PAX and VeloDyne.

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10/15/2025

To: Whom it may concern

Re: Auburn IN - Replacement DP
UGSI Chemical Feed, Inc. File No.: 202510-44344
Liquid Polymer Feed Equipment System

Thank you for your interest in UGSI Chemical Feed, Inc. Per the request of our representative, Gary Prehm at B.L. Anderson Company, we have prepared this BUDGET proposal for providing One (1) Polyblend® Polymer Feeder. Our Proposal is based on the following design criteria:

Design Criteria.

Polymer Pump Capacity (Maximum): 15 GPH
Water Flow Rate (Maximum): 3200 GPH

Design Criteria and System Sizing

Sludge Flow Rate, gpm: 300
Solids Concentration, %: 5.00 – Assumed-Not Provided
Active Polymer dose, lbs/dry ton sludge: 12
Active Polymer, %: 40
Polymer solution Concentration, % (v/v): .50

Calculated Outputs

lbs/min sludge	2502.00
lbs/min dry solids	125.10
lbs/hr dry solids	7506.00
tons/hr dry solids	3.75
lbs active polymer/hr	45.04
GPH active polymer	5.40
GPH neat polymer / unit	13.50
GPH dilution water / unit	2686.50

Our Polymer feed system is a packaged system. It consists of a polymer pump, mix chamber, piping, valves, instrumentation and controls to make a complete and functional system.

Each System is pre-assembled, piped, wired, and factory tested to facilitate installation and start-up at the jobsite. Installation at the jobsite is limited to interconnecting piping and wiring. The major System components are as follows:

1. Mixing chamber
2. Primary and Secondary Dilution Water Flow Indicators and Control Valves
3. Polymer Pump

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4. FRP NEMA 4X Electrical Control Panel
5. FRM NEMA 4x Junction Box [if Control Panel is Remote]
6. Instrumentation and Miscellaneous Accessories

System Features & Advantages

The UGSI Chemical Feed, Inc. Polyblend® Polymer Feed System incorporates many features and advantages, including:

- Superior polymer activation technique with two stages of mechanical mixing utilizing both high- and low- energy mixing zones results in substantially lower neat polymer consumption than hydraulic (non-mechanical) and single-stage mixing type polymer feed systems.
- Integral post dilution optimizes polymer activation and can increase the equipment operating capacity without affecting the footprint or power requirement.
- Transparent mix chamber provides quick visual indication of polymer feed and performance.
- Flexible pump and control configuration for different operational requirements.
- Stainless steel open frame equipment skid design facilitates easy access to all components for efficient inspection and maintenance and can be configured for floor or wall mounting.
- Reliable performance and robust construction reduce operator attention and lowers maintenance costs.
- Pre-assembled, piped, wired and tested at the factory prior to shipment.
- Delivered and installed quickly, with minimum construction and installation and cost and time.
- Proven track record supported by years of successful operational experience.

We have attached our detailed scope of work in section 1, technical proposal in section 2, and brochure in section 3.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to contact our sales representative, Gary Prehm of B.L. Anderson Company at 765-463-1518 or me directly at (856) 217-4362.

Sincerely,

Patrick Gallagher

Regional Product Manager

Cc: Michael Snuffin, UGSI Chemical Feed, Inc.
Krunal Parmar, UGSI Chemical Feed, Inc.
Gary Prehm, B.L. Anderson Company

SECTION 1

COMMERCIAL PROPOSAL Polyblend® Polymer Feed System

- Scope of Work by UGSI Chemical Feed, Inc.
- Scope of Work by Buyer
- Specification Clarifications and Deviations
- Manufacturers Services
- Schedule
- Proposal Validity
- Payment Terms
- Taxes
- Warranty
- Terms and Conditions
- Proposal Acceptance



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SCOPE OF WORK BY UGSI CHEMICAL FEED, INC. ('SELLER')

The following equipment and services are included in Seller's scope of work. All equipment will be manufactured in accordance with Seller's standard equipment specifications and installed in a non-hazardous area.

No.	<u>Item Description</u>	<u>Qty.</u>
1.	Polyblend® MM3000-P15AB Polymer Activation System, including: • Patented UGSI Mixing Chamber with Brass Impeller • Constant Speed: 1 HP, 3450 RPM, 115/230 V, 1 PH, 60 Hz (Wash-Down) • 36.40" x 26.00" x 47.35" Stainless Steel Frame	1
2.	Dilution Water Inlet, including: • 1½" PVC Piping for 1800 - 3200 GPH of Flow • Solenoid Valve: 1½" • Diaphragm Check Valve: 1" PVC • Globe Valve: 1" SS • Paddlewheel Flowmeters • Primary and Secondary Dilution	1
3.	Polymer Pump, including: • 15 GPH, Progressive Cavity Pump w/ Mechanical Seal, 316SS Rotor, & Viton Stator • ½" PVC Piping for 15 GPH Progressive Cavity Polymer Pump w/ Mechanical Seal	1
4.	Calibration Column, including: • Calibration Cylinder Kit	1
5.	Solution Outlet, including: • 1 ½" Static Mixer	1
6.	Power Assembly, including: • 120/60/1 Power Supply	1
7.	Electrical Control Panel, including: Skid-Mounted Electrical Control Panel, including: [B CONTROLS] • Programmable Microcontroller • "On-Off-Remote" circuit • "Run" indicator light • "Loss of Water Flow" indicator light • "Primary Water Flow" display • "Secondary Water Flow" display • "Polymer Flow" display	1

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No.	Item Description	Qty.
	• "Mixing Chamber Solution Concentration" display • "Post-Dilution Discharge Concentration" display • Remote Start contact • Polymer Pump Speed output signal • "Run" output contact • "General Alarm" output contact	

PRICE

To Follow

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SCOPE OF WORK BY BUYER

1. Equipment unloading and installation.
2. Chemical supply.
3. All civil works and concrete pad for equipment.
4. Anchor bolts & anchorage calculations.
5. Electric power to control panel as specified above in scope of supply.
6. All interconnecting piping, including from neat polymer storage to pump suction and from polymer feed system to point of application.
7. Water supply piping water connection – 25 psid at capacity specified above in scope of supply above.
8. Valves, fittings, appurtenances not specifically listed under Scope of supply by UGSI Chemical Feed, Inc.
9. Remote installation of control panel and interconnecting wiring from remote-mounted control panel to junction box, etc.
10. All Electrical conduit, wiring, electrical material, etc. from control panel to plant SCADA, etc.
11. Decks, stairs and mezzanines not specifically listed under Scope of Supply by UGSI Chemical Feed, Inc.
12. Room ventilation, air conditioning or lighting.
13. Videotaping {unless a videotape agreement is signed}.
14. Any translation services for documents or operator training.
15. Equipment handling at port of entry, including any customs duties/fees, port charges, federal, state or local taxes.
16. All taxes, fees, duties, tariffs, and other customs clearance costs, lien waivers, bonds and licenses.
17. Any items not explicitly listed under Scope of Supply by UGSI Chemical Feed, Inc.

SPECIFICATION CLARIFICATIONS AND DEVIATIONS

Specification Section	Item	Explanation

MANUFACTURER'S SERVICES

UGSI Chemical Feed, Inc. will provide 1 trip/ 1 day for Installation Inspection, System Start-up, and Operator Training.

DESIGN SUBMITTALS AND OPERATION & MAINTENANCE MANUALS AS FOLLOWS (English Only)

Submittals: Electronic Copy

O&M Manuals: Electronic Copy

SHIPPING TERMS

FOB Factory: Full freight allowed to project site.

SHIPPING INFORMATION

Shipping Dimensions: TBD

Estimated Shipping Weight: TBD

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SCHEDULE

As part of any binding Agreement that results from this proposal, Seller and Buyer shall mutually agree upon a production and delivery schedule (not to exceed the outside delivery date stated below). Our normal lead time for this type of equipment is:

Design Submittal (if required): 4-6 weeks after receipt of a fully executed purchase order

Equipment Shipment: 12-14 weeks after seller's written receipt of submittal approval and release for fabrication

PROPOSAL VALIDITY

Seller's price will be held valid for a period of 90 days from the date of this proposal. Seller shall have the right to reprice this proposal if the parties do not agree to a mutually acceptable purchase order within 90 days after the Proposal Date or if delivery occurs more than 365 days after commercial agreement. The price is based on tariff rates in effect on the date of this Proposal. If any applicable tariff rate increases prior to the parties' execution of a mutually agreed order, the price will be increased correspondingly. Prices are in US Dollars.

PAYMENT TERMS

Subject to prior credit approval, the terms of payment are:

20% Upon Approved Submittals, Net 30

20% Upon Release for Manufacturing, Net 30

60% Upon Shipment, Net 30

TAXES

Seller's Proposal does not include any sales, use, federal, state, local, excise, or other similar taxes or duties unless expressly stated in this quotation. All applicable taxes shall be paid by Buyer. Upon acceptance of an order by Seller, Buyer shall provide a resale certificate or tax exemption certificate, whichever is applicable to the Seller.

WARRANTY TERM

The Warranty Period is one (1) year from initial operation or 18 months from shipment, whichever occurs first, and is subject to the Standard Terms of Sale referenced in this Proposal.

TERMS AND CONDITIONS

Link to Sellers Standards Terms of Sale below, incorporated herein by this reference, will apply to any order resulting from this Proposal and are factored into the purchase price set forth in this Proposal.

<https://cleanwater1.com/hubfs/UGSIChemFeedTandCsRev.19.01.10.pdf>

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PROPOSAL ACCEPTANCE

An authorized signature indicates Buyer's acceptance of this proposal, including without limitation Seller's Terms and Conditions, reference above, and the following notes:

1. UGSI Chemical Feed, Inc. (Seller) proposes to furnish to the addressee named above (Buyer) the goods and services, if any, set forth above. Any items not shown above as detailed under 'SCOPE OF SUPPLY BY UGSI CHEMICAL FEED, INC.' are EXCLUDED. In addition:
 - i. Seller's price will be held valid for the listed under 'PROPOSAL VALIDITY'. Seller shall have the right to reprice this proposal if the Buyer's order is received after the period listed under 'PROPOSAL VALIDITY'.
 - ii. Prices are in US Dollars.
2. This proposal by Seller is contingent upon: (i) Seller's written acceptance of the signed proposal, a purchase order, or other document issued by the Buyer in response to this proposal; and (ii) Buyer's assent to the terms and conditions referenced and included in this proposal, such terms to take precedence in the event of conflict with any other terms or documents incorporated into the contract arising out of this proposal unless otherwise agreed in a writing, signed by "Seller"; and (iii) satisfactory completion of an anti-corruption due diligence review, if applicable.
3. All of the information supplied by Seller in connection with this proposal (including drawings, designs and specifications) (the "Information") is confidential and/or proprietary and has been prepared for Buyer's use solely in evaluating the purchase of the equipment and/or services described herein. Transmission of all or any part of the information to others, or use by Buyer for any purpose other than such evaluation, is expressly prohibited without Seller's prior written consent.
4. Please return a signed copy of this proposal or address and send your purchase order to:

UGSI Chemical Feed, Inc.
1901 West Garden Road
Vineland, NJ 08360
Attn: Debbie Petsch
Phone: (856) 896-2174
Fax: (856) 457-5920
E-mail: dpetsch@cleanwater1.com

Thank you for your interest in UGSI Chemical Feed, Inc. We are committed to meeting your expectations.

UGSI Chemical Feed, Inc. File No.: 202510-44344-1

Signature: _____

Name: _____

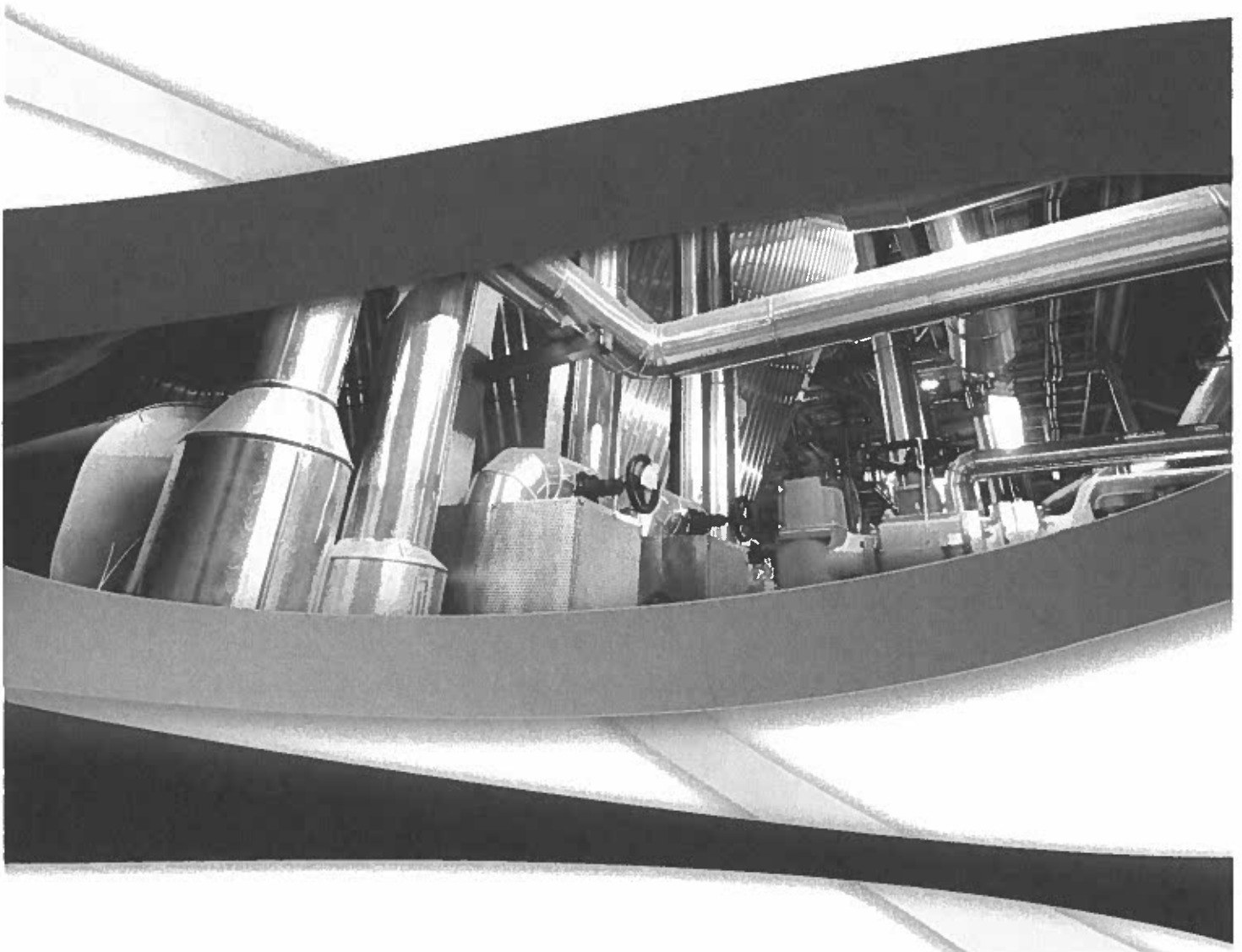
Company: _____

Date: _____

SECTION 2

TECHNICAL INFORMATION Polyblend® Polymer Feed System

- Process Design Criteria
- Process Description
- Major System Components
- System Features & Advantages
- Utility and Connection Requirements



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A. PROCESS DESIGN CRITERIA

Polymer Pump Capacity (Maximum):	15 GPH
Water Flow Rate (Maximum):	3200 GPH

B. PROCESS DESCRIPTION

Polyblend® Polymer Feed Systems are designed to prepare and deliver a homogeneous liquid polymer solution to a process application point or intermediate storage tank through either a batch or continuous operation. The system is designed to handle new polymer developments, ultra-high molecular weights, different charge densities, and even totally new chemistries.

Our proprietary designs use shear velocities designed for optimum initial wetting followed by dissolution to utilize the full polymer activation and provide maximum economy and value in the use of polymers. Sufficient mixing and wetting energy intensity are created and controlled through two-stages of mechanical mixing (Fig. 1). As polymer and water are introduced into the first stage of the mix chamber, the high-shear agitation created by the motor-driven impeller ensures proper activation during initial wetting of the polymer and prevents unwanted agglomerations. The solution shall undergo a tapered mixing intensity slope as it exits the initial high shear zone and passes through a second zone, isolated by a baffle. The second stage offers longer, low-shear mixing for dissolution and to minimize polymer fracture.

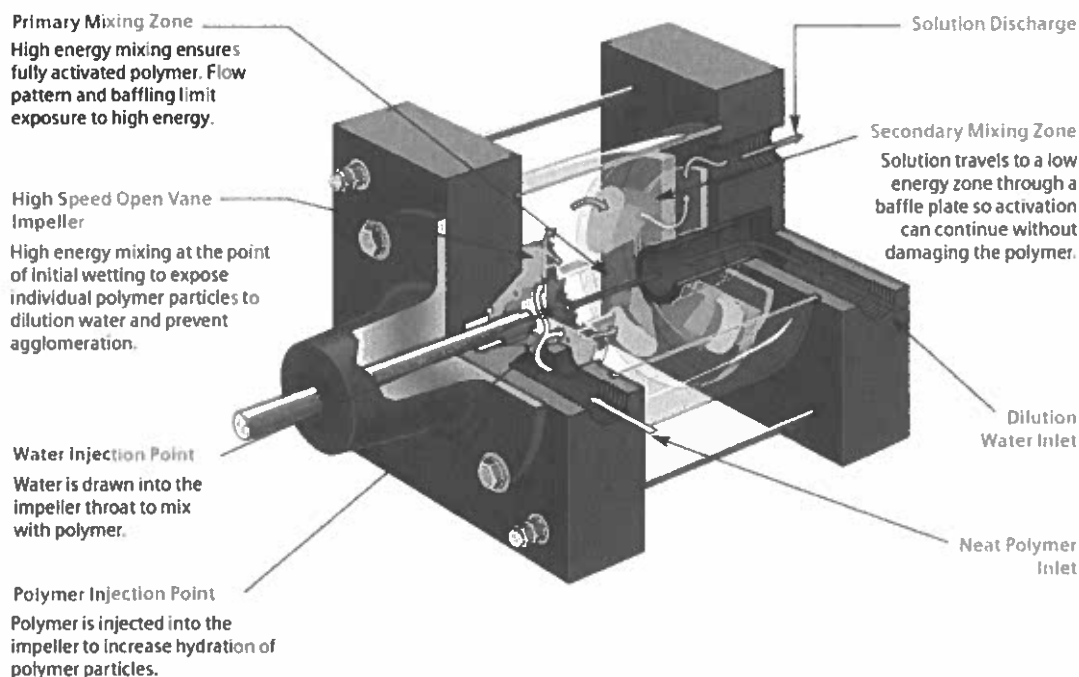


Figure 1. Isometric drawing of the mix chamber showing the unique high- and low-energy mixing zones and the liquid connection points.

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Once initiated by either a local switch or a remote contact, the Polyblend® system opens a solenoid valve that allows water to flow through the unit. Once proper water flow is detected, the mixing chamber and polymer metering pump are activated. Solution concentration is determined through adjustments to the polymer feed rate and dilution water flow rates. The polymer feed rate is controlled by manual adjustment or by a 4-20 mA input signal, depending on the control strategy. Dilution water shall be split into two streams. Primary water flow shall supply the mixing chamber. Secondary water flow shall be used to post dilute the activated polymer stream. These two streams shall be completely blended by a static mixer prior to exiting the unit. If water flow is interrupted, the unit ceases operation until proper flow is restored.

Upon exiting the mix chamber, the now homogenous polymer solution is ready for further dilution, if required by process demands, prior to being fed to the process application point.

C. MAJOR SYSTEM COMPONENTS

The Polyblend® Polymer Feed System is completely pre-assembled, piped, wired and factory tested prior to shipping to the job site. Following are the major system components. **Additional details are provided in the attached equipment specifications.**

1. Mix Chamber

The transparent design of the mix chamber provides quick visual indication of polymer feed and performance. The mixing chamber shall include a stainless-steel injection check valve with quick disconnect design.

Parameter	Value
Construction	Acrylic, PVC
Impeller Type	Brass
Impeller Speed, RPM	3400
Maximum Capacity, gal/hr	2400
Drive Type	Direct Drive
Drive Motor	Constant Speed: 1 HP, 3450 RPM, 120/240 V, 1 PH, 60 Hz (Wash-down)
Power Requirements	120/60/1

2. Dilution Water Control

The polymer feed system shall have an electric solenoid valve for on/off control of total dilution water flow. Each stream shall have an electronic flow sensor with immersed in-line element capable of transmitting a signal to the unit controller for display of flow rate. Each stream shall have a rate control valve for isolation of or throttling of water flow and a sensor to confirm sufficient water flow for proper operation.

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Parameter	Value
Flowmeter Type	Paddlewheel
Sensor Type	Integral
Valve Type	Globe

3. Polymer Pump

The polymer pump supplies neat emulsion polymer to the mix chamber for activation and dilution. Reliable polymer feed is required for precise control of solution concentration. The pump flow rate is controlled manually via potentiometer or automatically via 4-20 mA input signal.

Parameter	Value
Quantity	1
Type	Progressive Cavity
Material (Rotor/Stator)	316SS/Viton
Suct. x Disch., inches	½ x ½
Flow Capacity, gal/hr	15 GPH
Discharge Pressure, psi	100
Drive Motor	½ HP, TEFC
Power Requirements	120/60/1 Main incoming power is converted to 230/60/3 via Variable Frequency Drive (VFD)

4. Electrical Control Panel

The Polyblend® Polymer Feed System includes a complete pre-wired electrical control system. If the controls are remote mounted, a local junction box is provided on the polymer feed system equipment skid.

The electrical control system, as a minimum, shall include the following interface:

- Programmable Microcontroller
- 'On-Off-Remote' circuit
- Pump selector switch
- 'Run' indicator light
- 'Loss of Water Flow' indicator light
- 'Primary Water Flow' display
- 'Secondary Water Flow' display
- 'Polymer Flow' display
- 'Mixing Chamber Solution Concentration' display
- 'Post-Dilution Discharge Concentration' display
- Remote Start contact

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- Polymer Pump Speed output signal
- 'Run' output contact
- 'General Alarm' output contact

5. Instrumentation and Miscellaneous Accessories

The polymer feed system shall include the following instrumentation and accessories:

- System pressure gauge
- Polymer pump calibration column
- Polymer pump pressure gauge for PC/Gear Pump only.
- Polymer pump pressure relief valve for PC/Gear Pump only.
- Union connection for dilution water flowmeters
- Post dilution static mixer
- Stainless steel open frame equipment skid with integral anchor and lifting lugs

D. SYSTEM FEATURES & ADVANTAGES

The Polyblend® Polymer Feed System offers maximum value measured by performance and reliability as well as capital, installation, maintenance, and operating costs. This is illustrated by the following system advantages:

1. Superior Polymer Activation

The mechanical mixing provided in the mix chamber provides higher activity polymer than processes utilizing hydraulic mixing. Polymer activation is further increased relative to other systems using other mechanical mixing designs by applying two unique mixing stages. The motor-driven impeller on the first stage creates high enough mixing energy to ensure optimal activation and prevention of fisheye formation. Mixing intensity decreases as the solution enters the second stage for longer, low-shear mixing, enhancing dissolution while reducing splintering of the long polymer molecular chains. The better activity of the polymer solution means substantially lower neat polymer consumption than hydraulic (non-mechanical) and single-stage mixing type polymer feed systems, and a reduction in chemical use and cost in the process.

2. Post-Dilution Optimizes Polymer Activation and Increases System Capacity

Post-dilution is required to optimize the activation of emulsion polymers. Inverting (breaker) surfactant included in emulsion polymer products can be best utilized when polymer solution concentration becomes as high as possible (ANSI/AWWA Standard B453-96). Therefore, it is recommended to make up emulsion polymer solution at 1% concentration in the mix chamber, followed by post-dilution down to feed concentration, 0.5% for dewatering and 0.25% for clarification processes. Another benefit of having a post-dilution is doubling the system capacity. As plant loads increase and operating requirements change, an increased demand for polymer solution is often realized. Each Polyblend® M Series Polymer Feed System is designed with integral post dilution controls and mixing capabilities. This

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effectively increases the equipment operating capacity without affecting the footprint or operating power requirement.

3. Transparent Mix Chamber

The mix chamber is constructed of custom-milled PVC endplates fastened around a 1/4" thick acrylic housing. This combination of materials offers outstanding resistance to damage from chemicals, corrosion, and accidental impact without sacrificing the benefits of a clear chamber. The transparent housing enables instantaneous verification of mixer operation and polymer feed that would otherwise be unavailable for a mix chamber utilizing opaque materials of construction.

4. Customizable Pump and Control Configurations

In addition to the standard diaphragm-type polymer feed pump, a range of both progressive cavity and gear pumps are available if necessary based on polymer type or desired based on customer preference. Similarly, in addition to the standard control package utilizing 'On-Off-Remote' operation, options for more complex and configurable controls, including necessary instrumentation and valving, are available. A programmable microcontroller is applicable where more indications of flow, percent dilution, and other functions need to be displayed. This is especially effective when it is necessary to assure consistent solution concentrations are maintained in the holding tank. This highest degree of control is most useful where precise control of consistent solution concentrations is required, either from 4-20 mA signal or local control. The Polymer Dosage Controller offers a system with unmatched activation flexibility.

5. Open Frame Equipment Skid

Each complete Polyblend® M Series Polymer Feed System is skid-mounted. The type 304 stainless steel skid construction provides superior structural strength, chemical compatibility, and corrosion resistance. Use of an open frame design for the skid and a simple equipment layout facilitates access to each system component from multiple sides for easy inspection and maintenance. Custom-design skid configurations and equipment layouts are available and can utilize wall-mounted systems in addition to the standard floor-mounted arrangement.

6. Reliable Performance and Robust Construction

The robust construction of the Polyblend® Polymer Feed System allows the feed, dilution, and mixing components to be subjected to minimum stress, lowering the maintenance requirements.

7. Factory Tested

Each complete system is pre-assembled, piped, and wired at the factory, allowing for thorough factory testing of not just each component, but of the entire system prior to shipment. At a minimum, a factory quality technician shall operate and calibrate the polymer

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pump, verify calibrations for flow meters, pressure gauge, and other instrumentation, and test the complete control system prior to running the unit in automatic mode.

8. Minimum Installation Cost and Time

Most parts for the Polyblend® M Series Polymer Feed Systems are inventoried at the factory, reducing lead times for shipment to as little as one week in some cases. By skid-mounting the system, installation is quick and straightforward, with minimum time and cost, and water line, neat polymer feed, activated polymer solution and electrical connections are all predetermined and are clearly indicated. Onsite construction is limited to providing a concrete equipment pad to mount the system to and completing the system connections.

9. Proven Track Record

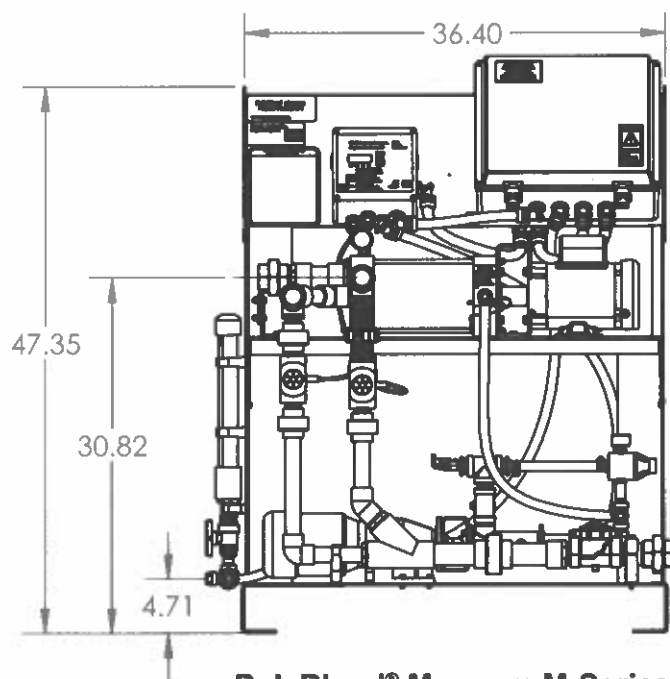
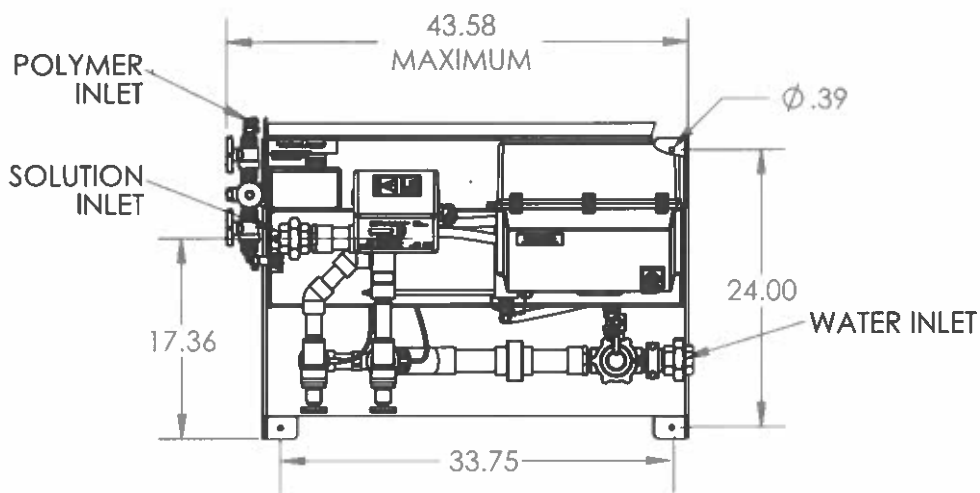
The Polyblend® Polymer Feed System has been available for over three decades. This system is a fully developed, mature product supported by an extensive list of successful installations.

E. UTILITY AND CONNECTION REQUIREMENTS

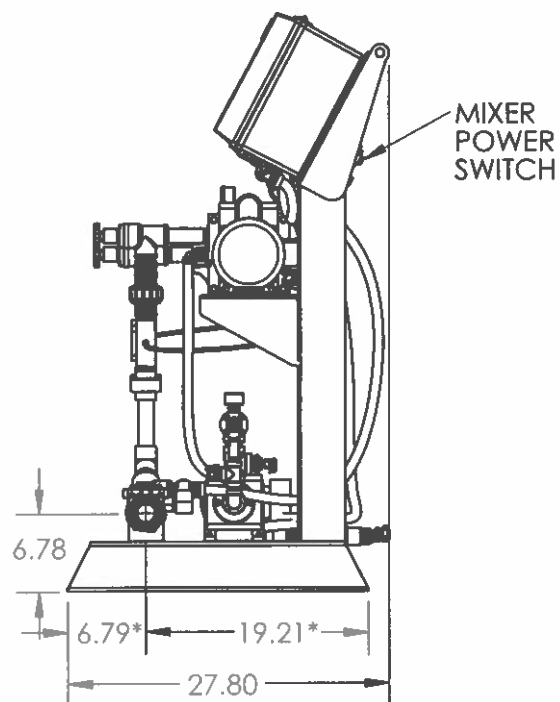
Utility and connection requirements for PolyBlend® Polymer Feed System are as follows:

Parameter	Value
Power Requirement	120V, 1 phase, 60 Hz, 25 Amp
Signal Connection	4-20 mA (polymer feed pump)
Water Requirement	1 ½" Inlet, 3200 gph, 25 psid
Polymer Inlet Connection	½" or 1" Inlet (at pump suction)
Solution Outlet Connection	1 ½" Outlet

PolyBlend® Magnum M-Series
Polymer Feed Systems
With Progressive Cavity Pump and "B" Control



PolyBlend® Magnum M-Series
Polymer Feed Systems
MM1800-MM3200



*** - Approx. Measurement**

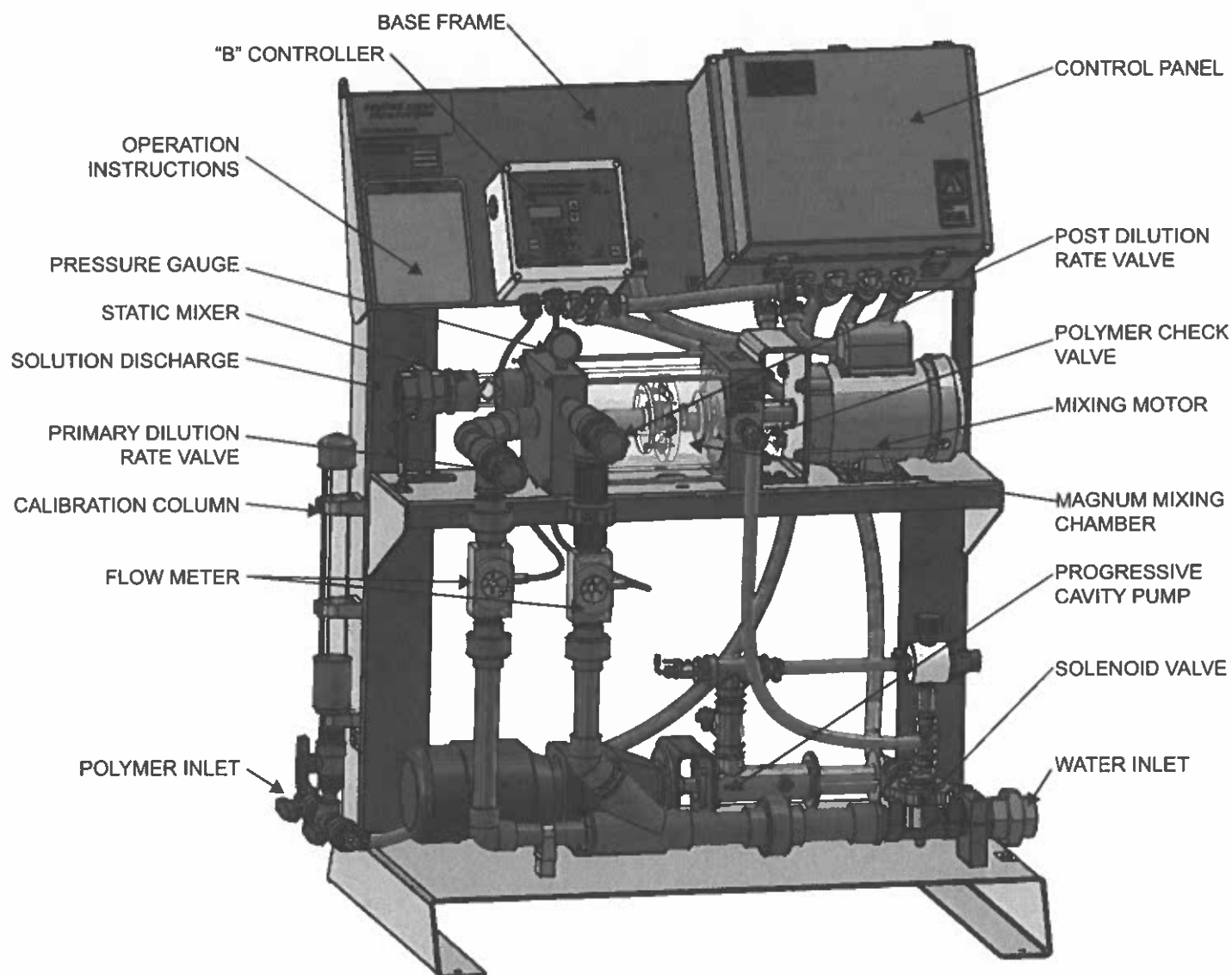
UGSI Chemical Feed, Inc.

Vineland, NJ 08360
 856.896.2160 phone
 856.457.5920 fax

info@ugsichemicalfeed.com
www.ugsichemicalfeed.com

Dimensions
 CF.480.310.185.CN.0117

PolyBlend® Magnum M-Series
Polymer Feed Systems
With Progressive Cavity Pump and "B" Control



PolyBlend® Magnum M-Series
Polymer Feed Systems
MM1800 to MM3200

UGSI Chemical Feed, Inc.

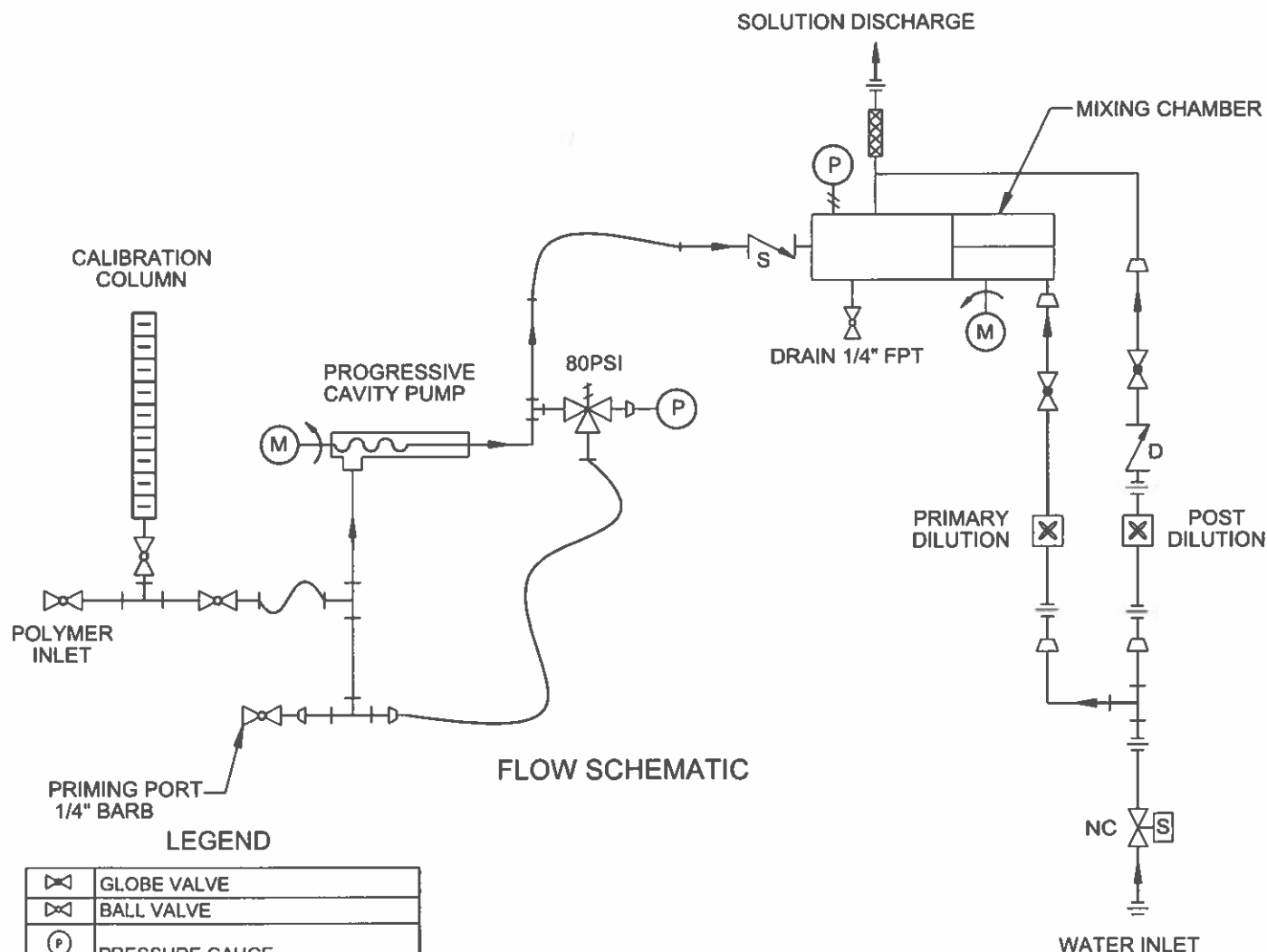
Vineland, NJ 08360
 856.896.2160 phone
 856.457.5920 fax

info@ugsichemicalfeed.com
www.ugsichemicalfeed.com

General Arrangement
CF.480.310.585.CN.0117

UNIT CONNECTIONS			
WATER FLOW RATE	WATER INLET	SOLUTION DISCHARGE	POLYMER INLET
1800 GPH	1-1/2" FPT	1-1/2" FPT	1/2"-1" FPT
2400 or 3200 GPH	1-1/2" FPT	1-1/2" FPT	1/2"-1" FPT

PolyBlend® Magnum M-Series
Polymer Feed Systems
With Progressive Cavity Pump and "B" Control



LEGEND

	GLOBE VALVE
	BALL VALVE
	PRESSURE GAUGE
	FLOW SWITCH
	PROGRESSIVE CAVITY PUMP
	POPPET SPRING CHECK VALVE
	DIAPHRAGM CHECK VALVE
	SOLENOID VALVE
	UNION
	REDUCER
	STATIC MIXER
	MIXING CHAMBER
	MOTOR
	FLOW METER
	CALIBRATION COLUMN
	PRESSURE RELIEF VALVE

UGSI Chemical Feed, Inc.

Vineland, NJ 08360
856.896.2160 phone
856.457.5920 fax

info@ugsichemicalfeed.com
www.ugsichemicalfeed.com

Flow Schematic
CF.480.310.677.CN.0217

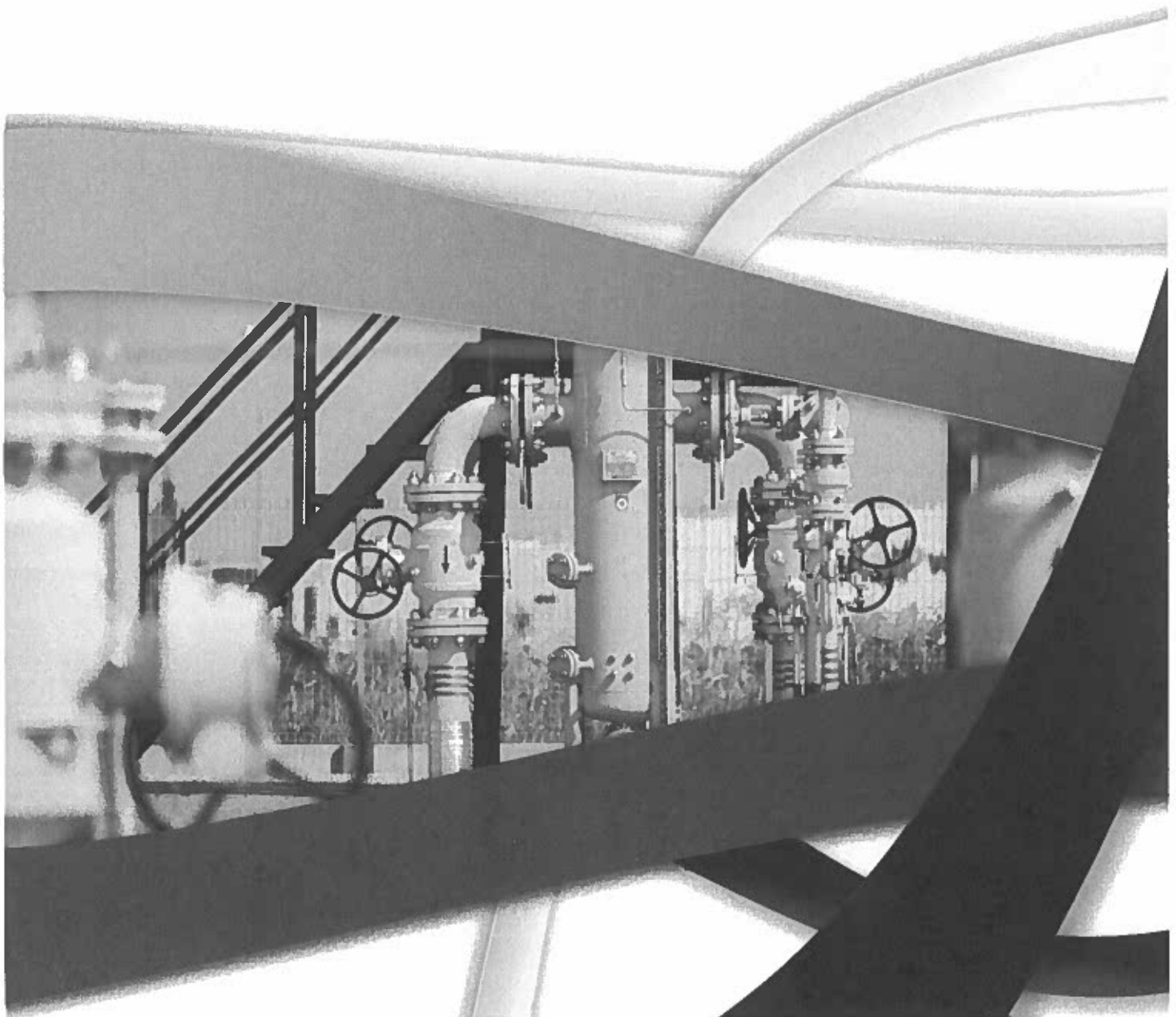
UGSI CHEMICAL FEED

A cleanwater1 Company

SECTION 3

BROCHURE

Polyblend® Polymer Feed System



PolyBlend® Polymer Feed System

Magnum M Series

The PolyBlend® Magnum M Series liquid polymer feed system is the best product available to handle your liquid/solid separation needs. The Magnum M Series combines proven motorized mixing technology with precise controls to provide superior polymer preparation. In addition, the Magnum M Series can be configured with a variety of pump offerings, and automatic dosage control with constant solution strength to meet a wide range of polymer feed application requirements. The Magnum M Series units are also available for classified area environments including Class 1, Division 1 and Class 1, Division 2 areas.

The Magnum M Series is engineered for quick easy service and is built to last. The open frame design permits quick and easy maintenance and the Magnum M Series is engineered to handle the harshest environments.

The Magnum M Series is designed to handle new polymer developments, ultra-high molecular weights, different charge densities, and even totally new chemistries. Optional advanced controls provide precise and consistent solution strength. Whether you adjust the Magnum M Series output remotely via 4-20 mA signal or right at the unit, water flow and polymer feed increase or decrease together. Primary and secondary dilution water are also kept at the same ratio as the output is adjusted.

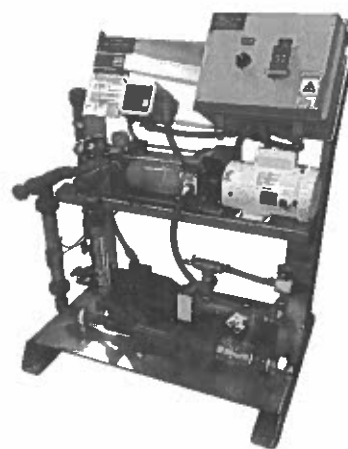
A variety of models are available covering output ranges from 12 to 2400 USGPH. Choose between diaphragm, gear, or progressive cavity polymer pumps for your application.

Key Benefits

- Improved polymer efficiency providing maximum polymer activation
- Open-frame design for easy access
- Reliable and consistent direct drive mixing
- Optional advanced controls to meet your application needs

Specifications

Power	115-230 VAC / 60 Hz / 1 Phase 230-460 VAC / 60 Hz / 3 Phase
Dimensions (W x H x D)	36.40" x 47.35" x 27.80" (Approx.)
Polymer pump	Diaphragm, Gear, or Progressive Cavity
Material	304 SS Frame / PVC
Controls	PolyBlend® A, B,B+ or C



Technical Data

Magnum M Series Model Numbering Guide

The model numbers for the Magnum M-Series can be generated as follows:

EXAMPLE: MM 2400 - P - 10 AB - V

Water Flow Rate in GPH

240
601
1200
1800
2400

Pump Type and Output GPH

Diaphragm	Gear	Progressive Cavity
D0.4	G36	P2
D1	G60	P6
D2.5	G200	P10
D4	G660	P30
D10		P50

* Model number is "601"

Options

N - Nickel Plated
V - Variable Speed Mixer
R - Mix Chamber Pressure Relief
G - 4.5" Gauge with Isolator
L - Loss of Polymer Flow

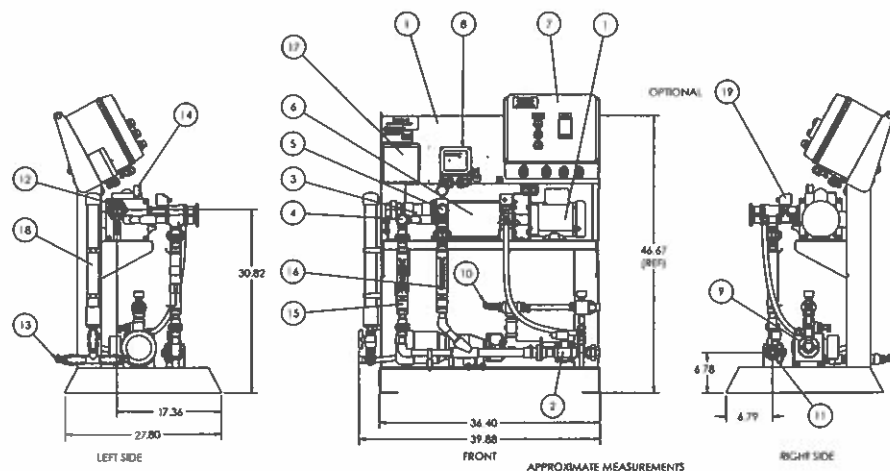
Controls

A - On-Off Remote
B - Micro Controller
P - PLC / HMI Controls (B+)
C - Flow Proportional

Voltage

A - 115 VAC / 60 Hz / 1 ph
B - 460 VAC / 60 Hz / 3 ph
C - 230 VAC / 60 Hz / 1 ph
D - 230 VAC / 60 Hz / 3 ph
E - 575 VAC / 60 Hz / 3 ph

General Layout



Key Description

1	Base Assembly
2	Solenoid Valve
3	Static Mixer
4	Primary Dilution Control Valve
5	Secondary Dilution Control Valve
6	Mix Chamber
7	Motor Control Panel
8	Micro-Controller
9	Pump, Progressive Cavity
10	Pump, Priming Port
11	Water Inlet
12	Solution Discharge
13	Polymer Inlet
14	Pressure Gauge (Mix Chamber)
15	Primary Dilution Water Sensor
16	Secondary Dilution Water Sensor
17	Operators Instructions
18	Calibration Column
19	Loss of Polymer Flow (Optional)

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The information provided in this literature contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of a written contract.

PolyBlend® Polymer Feed System Control Selection

"A" Controls Specifications:

Unit shall be powered through an on-off-remote circuit controlled by a three-position switch. In the remote switch position, the unit shall accept a remote run signal. Unit is powered in the ON position.

Unit shall accept a 4-20 mA analog signal to pace the polymer metering pump. This signal shall be processed

by a pump controller that may be mounted remotely. The controller shall have LCD readout of pumping strokes per minute (or hour), a stroke frequency push pad for local pump control and an internal off external circuit for pacing signal selection.

Unit shall have a dilution water loss of flow sensor which, sensing that water flow has been interrupted for any reason, will place the polymer pump on standby and will restart it automatically when flow is restored. An integral timer shall monitor loss of flow and energize contacts indicating alarm after 15 seconds of continuous loss.

Inputs:

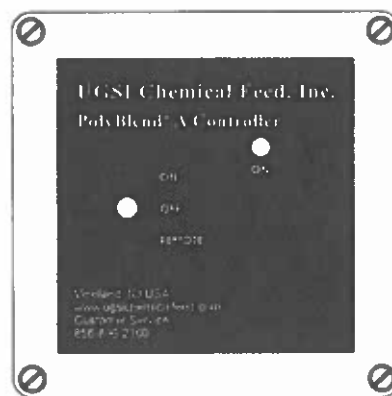
- 4-20 mA signal
- Remote start contact

Outputs:

- Run Contact
- Loss of water
- Contact Switch in Remote Position

Applications:

- A. Standard control package which will accommodate most of your control requirement



PolyBlend® Polymer Feed System "A" Controls



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SOLUTIONS

"B" Controls Specifications:

Unit shall be operated with a programmable micro controller. Controller shall have polycarbonate touchpad membrane with four-digit LED readout. Enclosure shall be non-metallic and of waterproof design.

Micro controller shall pace polymer metering pump based on operator programmed data or based on a 420 mA analog input signal. Operator shall be able to determine mode of operation at touchpad, internal or external.

Internal mode shall allow for automatic polymer pump pacing based on programmed set point. Operator shall be able to enter a makeup concentration set point. Controller will compute a ratio of polymer to water from primary dilution water flow rate signal generated by flow element. Controller will generate signal to pace pump accordingly. As primary dilution water flow changes the set point concentration will be automatically maintained by controller.

External mode shall allow for automatic polymer pump pacing based on a 4-20 mA analog input signal.

Unit shall be powered through an on off remote circuit. In the remote mode, the unit shall accept a remote run signal. Unit is manually powered in the ON mode. Controller shall indicate mode of operation with LED.

Unit shall have a dilution water loss of flow sensor which, sensing that water flow has been interrupted for any reason, will place the polymer pump on standby and will start it automatically when flow is restored. An integral timer shall monitor loss of flow and energize contacts indicating alarm after 15 seconds of continuous loss. Controller shall indicate loss of water alarm with LED.

Controller LED display shall indicate:

- Low flow set point
- Primary water flow
- Secondary water flow
- Polymer flow
- Loss of water
- Make up solution concentration in mixing chamber
- Discharge solution concentration including post dilution

Controller shall have preprogrammed auto flush cycle, which will disable polymer pump yet allow dilution water to flow through system for a preset time at each shutdown.

Inputs:

- 420 mA signal
- Remote start control
- One configurable alarm contact

Outputs:

- Run contact
- Loss of water flow

Applications:

- A. Where more indications of flow percent dilution and other functions need to be displayed.
- B. Especially effective when system is being used as a make-down unit, to assure consistent solution

concentrations are required in the holding tank. Local control only.



PolyBlend® Polymer Feed System "B" Controls

"B+" Controls Specifications:

Unit shall be operated with a PLC and high resolution HMI for greater functionality and future customization. PLC shall include Ethernet communications. An Ethernet Switch shall be supplied inside enclosure. Enclosure door mounted NEMA 4X HMI with 4" high resolution color touch-screen and four membrane Function Keys. A door mounted Power On/Off switch, Power On light and Emergency Stop pushbutton shall be supplied on the enclosure door with quick-release latches.

PLC shall pace polymer metering pump based on operator programmed data or based on a 4-20 mA analog input signal. Operator shall be able to determine mode of operation at HMI, internal or external.

Internal mode shall allow for automatic polymer pump pacing based on programmed set point. Operator shall be able to enter a make-up concentration set point. PLC will compute a ratio of polymer to water from primary dilution water flow rate signal generated by flow element. PLC will generate signal to pace pump accordingly. As primary dilution water flow changes the set point concentration will be automatically maintained by PLC.

External mode shall allow for automatic polymer pump pacing based on a 4-20 mA analog input signal.

HMI Functionality:

- Setup Screens for entry of sensor and system data
- Control, Configuration and Calibration screens for manual operation of motors and Dilution water valve, adjusting analog outputs, calibrating polymer pump capacity and configuring water flow sensors.
- Entry of Polymer Concentration, Loss of Water Set Point and Flush Time.

- Status screens to show the following:
 - ON-OFF-REMOTE status
 - System mode – Maintenance, calibration, run modes
 - System Running Indicator
 - Loss of Water Indicator
 - Alarm status Indicator
 - Make-Up Concentration Readout in %
 - Feed Concentration Readout in %
 - Polymer flow Readout in selected units (calculated)
 - Primary Water Flow Readout
 - Secondary Water Flow Readout
 - System Flush Indicator
 - Pump Capacity Exceeded Indicator
- Help screens to assist setup
- Alarm screen with history
- A No-Action Clean Screen allowing HMI wipe-down while powered.
- On-screen Touch and membrane Function Key navigation buttons allow surfing between screens.
- Main Menu
- System Mode
- System Status
- Pump Control
- Pump Calibrate
- Mixer Control
- Water valve control
- System Run Times
- System Set-up Screens
- Help Screen?
- Set Time, Date and LCD Intensity
- Flush Cycle

DIGITAL INPUTS:

- Loss of power input
- E-Stop pushbutton
- Motor overloads (for mixer motor and polymer pump)
- Neat polymer pump protection (thermal flow switch)
- Remote alarm
- Remote start
- Loss of Polymer flow switch
- Neat polymer supply tank low level switch
- Primary flow sensor
- Secondary flow sensor
- Seven available inputs for future customization
(All inputs are wired as 24 V DC Sinking)

ANALOG INPUTS:

- REMOTE 4-20mA Signal to control the speed of the Polymer pump.
- 4-20mA Input can be used for connection to a Polymer flow meter for displaying actual Polymer Flow.
- Room for an optional analog I/O module is provided to connect 4-20mA water flow meters, scales or other devices.

DIGITAL OUTPUTS:

- System running relay
- Loss of Water Flow relay (Set Point is configurable)
- System in "Remote" verification relay
- Dilution water valve open/close control relay
- Polymer Pump Run control relay
- Mixer Motor Run control relay
- Alarm output relay
- Pulse Output (adjustable 0 – 360 pulses/minute for solenoid

actuated pumps)

- Four available digital outputs (For future customization)

ANALOG OUTPUTS:

- 4-20 mA polymer pump pacing signal
- 4-20 mA customer pump pacing feedback signal
- Room for an optional analog I/O module is provided to control devices or provide primary and secondary water flow feedback
- System running

ALARMS:

- E-Stop Pushbutton alarm
- Remote Alarm Input
- Mixer Motor OL
- Polymer Pump Motor OL
- Polymer Pump Protection Switch
- Loss of Polymer Switch
- Booster Pump Motor OL
- Static Water Pressure Switch
- Booster Tank Low Level
- Bulk Polymer Tank Low Level
- PLC Battery Low
- Low Water Flow Timeout
- Loss of Analog Input Channel 1
- Loss of Analog Input Channel 2

"C" Control Specifications:

With the introduction of the Polymer Dosage Controller, the "C" Control system has been upgraded and is now capable of local and remote flow pacing modes to maintain a constant polymer solution concentration. Components shall include a modulating flow control valve with orifice size based on flow setpoint determined by the controller. Feedback control shall be supplied by monitoring dilution water flow with electronic flowmeters for automatic valve adjustment. This control function shall ensure consistent dosage flow rates and concentration by automatically compensating for changes in incoming water flow rate or pressure by changing the valves variable orifice.

Controller shall be capable of three modes of operation including:

Polymer flow rate setpoint The system shall maintain a desired polymer flow rate either by manual entry setpoint or via a 4-20 mA input signal. The dilution water valve will adjust automatically to maintain the polymer solution concentration setpoint.

Water flow setpoint:

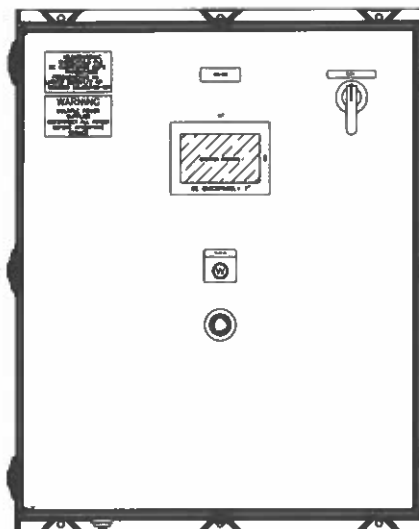
The system shall maintain a desired water flow rate either by manual entry setpoint or via a 4-20 mA input signal. The polymer pump will adjust automatically to maintain the polymer solution concentration setpoint.

Polymer solution concentration setpoint:

The system shall maintain a desired polymer solution concentration either by manual entry setpoint or via a 4-20 mA input signal. The controller shall sense changes in incoming make-up water flow. The system shall automatically maintain a constant concentration via a modulating water flow control valve. This control function shall ensure consistent dosage flow rates and concentration by automatically compensating for changes in incoming water flow rate or pressure by changing the valves variable orifice.

Remote control mode includes:

- Remote polymer flow rate control via 4-20 mA analog input.
- Remote polymer solution concentration control via 4-20 mA analog input.
- Remote water flow rate control via 4-20 mA analog input.
- Electronic static water pressure switches, differential pressure switches, or similar electric devices shall not be acceptable for monitoring water flow.
- Controller shall shut off polymer pump if water flow falls below an adjustable pre-set flow rate. Unit will automatically restart when the proper flow rate is resumed. This will prevent feeding neat polymer in the absence of make-up water flow. Unit shall shut down and alarm after pre-set time.
- Controller shall have pre-set adjustable auto-flush cycle which will disable polymer pump yet allow dilution water to flow through system for a pre-set time at each shutdown.
- In the event the system water supply fluctuates.



PolyBlend® Polymer Feed System "C" Controls

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