

**Acrison®**

*Polymair®*  
*Polyelectrolyte Processing Module*

*for Dry and Liquid Polymers*

**Model 512**



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*Industrial and municipal  
chemical feed equipment*

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# Polymair® Model 512

## Packaged Polyelectrolyte Processing Module

**Cuts water and wastewater treatment cost by accurate feeding, positive dispersion, and complete wetting of any dry and most liquid polymers.**

### Polymair Model 512

The Polymair Model 512 Polyelectrolyte Processing Module automatically and efficiently prepares a homogeneous and precise solution from either dry or liquid polymers.

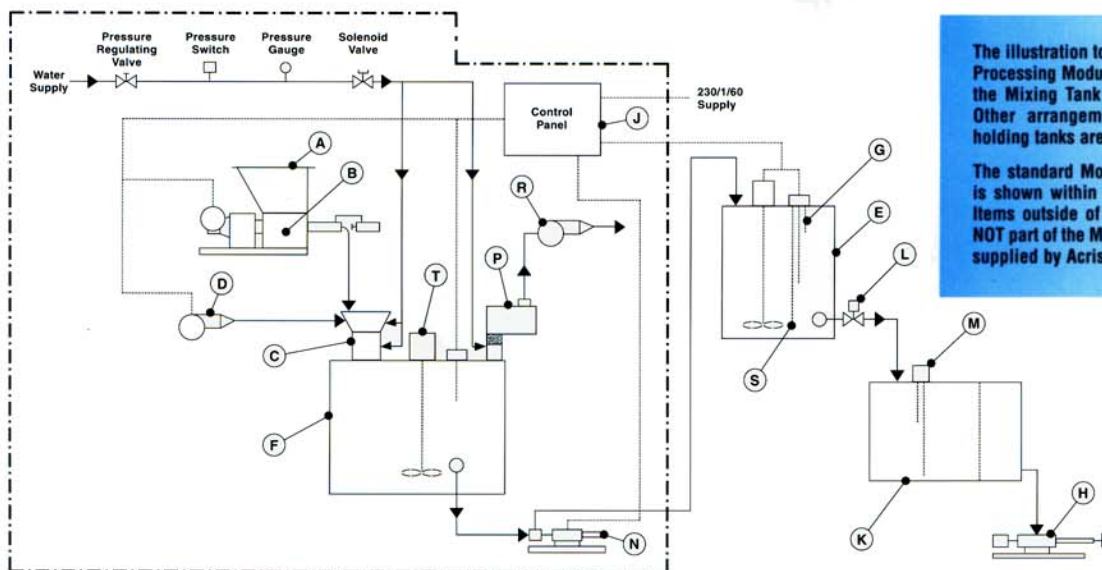
Designed primarily to handle dry polyelectrolytes, the Model 512 Processing Module can be arranged to process both dry and liquid polymers by including a dry polymer feeder and a liquid/emulsion metering pump that connect to the wetting chamber of the

Processing Module. Manual selection provides the automatic transfer from a dry to liquid, or a liquid to dry system without the need for any modifications whatsoever.

Prepared solution is automatically transferred to the applicable tank or tank system.

The Model 512 Processing Module is furnished as a complete packaged assembly mounted onto a "skid" type base.

### POLYMAIR® 512 SYSTEM OPERATION



The illustration to the left shows a Model 512 Processing Module with gravity transfer from the Mixing Tank (E) to the Aging Tank (K). Other arrangements of mixing/aging and holding tanks are available.

The standard Model 512 Processing Module is shown within the heavy broken line box. Items outside of the heavy broken line ARE NOT part of the Model 512 Module, but can be supplied by Acrison.

### Dry Polymer Module Operation

The Polymair Model 512 Module operation can be easily understood by following the Flow Diagram above. Dry polymer is usually manually loaded into the Feeder Hopper (A) and then accurately metered at a preset rate by Feeder (B) into Wetting Chamber (C). The addition of air from Blower (D) creates a suction at the inlet to the wetting chamber, drawing polymer into a continuously flowing, turbulent water/air cyclone within the mixing/wetting zone of the wetting chamber.

Turbulence is generated as the pressurized air stream contacts the flowing water within the central portion of the wetting chamber. The subsequent dispersion and contact of each polymer particle with water, as a result of this action, ensures the complete and thorough wetting of polymer without clumping, agglomeration or "fisheyes." The completely wetted polymer solution then drops into Receiving Vessel (F) [which includes Mixer (T)] and is immediately and continuously transferred into

a separate Mixing Tank (E) by Transfer Pump (N) without damaging the polymer chain. The Exhaust Blower (P) of Air Scrubber (P) also assists in generating a downdraft at the inlet of the wetting chamber preventing even the smallest polymer particles from escaping. Only clean air is returned into the atmosphere.

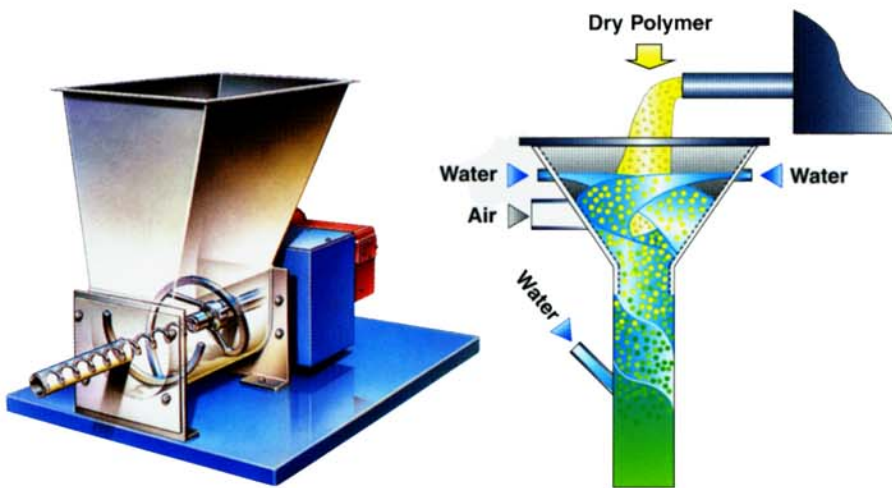
Low Level Probe (S), located in the Mixing Tank (E), initiates start-up of the system; its High Level Probe (G) shuts-off the Processing Module. Prepared polymer solution is then fed into the process at the desired rate by Metering Pump (H).

Logic for the automatic transfer of solution to the Aging Tank (K) is also provided upon command from Level Probes (M) in Aging Tank (K), through Transfer Valve (L). Operation of the entire Model 512 Module is performed by an embedded logic controller located in the Control Panel (J).

# A compact, economical and advanced Polyelectrolyte Processing Module for the highly efficient preparation of both dry and liquid polymers.

## Features

- **Positive dispersion and isolation** — of each dry polymer particle within the water cyclone wetting chamber provides maximum surface area exposure to ensure complete wetting without “fisheyes.”
- **Accurate metering of dry polymer** — usually  $\pm 1$  to 2 percent or better (error) based on a given number of consecutive one minute samples.
- **Air Scrubber** — ensures that only clean air is evacuated from the Processing Module. The scrubber utilizes a demister system which filters all air leaving the receiving vessel.
- **Completely enclosed design** — ensures that polymer and water are separated to prevent the hygroscopic polymer from absorbing moisture (dry system).
- **Time delay interlocks** — ensure that water is flowing before and after each dry feeding cycle.
- **Transfer Pump** — conveys wetted polymer from the receiving vessel to a mixing/aging or holding tank(s).
- **Water Pressure Switch** — prevents the Processing Module from operating should the water pressure drop.
- **Hopper low level** — warns the operator when dry polymer supply in the feeder hopper is low.
- **Embedded Logic Controller** — versatile, comprehensive, state of the art electronics for enhanced control of polymer preparation and overall system operation.
- **Compact design** — for minimum floor space and head room requirements.
- **Convenient polymer filling height** (dry system).
- **All components of the basic Model 512 Processing Module are completely factory wired and piped** — therefore, it is only necessary to connect power to the control panel and provide water to the system.



**Dry Polymer Feeder** — accurate metering of dry polymer is assured by an Acrison Model 105X dissimilar speed, Double Concentric Auger Volumetric Feeder.

**Cyclone Wetting Chamber** — combines swirling water and air with polymer for complete and thorough wetting. The unique design of this wetting chamber allows use of pressurized atmospheric air directly.



**Control Panel (NEMA 4)** — provides automatic control of the entire Model 512 Processing Module (system) with a manual over-ride for each major function.

## Basic Specifications

- **Dry Polymer Feeder:** Heavy-duty Acrison Model 105X to ensure positive, reliable and accurate feed. The standard feeder hopper is two cubic feet in capacity, constructed of 11 gauge 304 stainless steel. The feeder is totally enclosed to prohibit moisture from entering.
- **Cyclone Wetting Chamber and Scrubber:** 316 stainless steel construction.
- **Receiving Vessel:** 20 gallons, 11 gauge 304 stainless steel.
- **Transfer Pump:** Constant speed, direct coupled, with 316 stainless steel contact parts.
- **Control Panel:** NEMA 4.
- **Embedded Logic Controller:** Operates the Model 512 Processing Module in the automatic mode.
- **Power Requirements:** 230/1/60.
- **Base Dimensions:** 54 x 44 inches.

### ***Discover the difference!***

*We cordially invite you to witness a test in Acrison's new and expanded state-of-the-art Customer Demonstration Facilities, handling your actual product(s) with the specific equipment we recommend for the application. Usually, there is no cost or obligation for this service.*

*Discover the difference in technology, quality and performance.*



### **Acrison products...**

- Models 101 and 130 Volumetric Feeders
- Models V101 and V130 Volumetric Feeders
- Model 1015 Volumetric Feeder Series
- Model 105 Volumetric Feeder Series
- Model W105 Volumetric Feeder Series
- Model 120 Volumetric Feeder
- Model 140 Volumetric Feeder Series
- Model 170 Volumetric Feeder Series
- Model 200 Series of Weigh Belt Feeders
- Model 203B Series of Weigh Auger Feeders
- Models A401, 402 and 404 Series, A405 and 406 ("Weight-Loss-Differential") Weigh Feeders
- Model Series 403 ("Weight-Loss-Differential") Weigh Feeders
- Model 403B(D) Batch/Dump Weighing Systems
- Model 404BZ(BU) Bulk Bag Unloader Batch Weigher
- Models 350 and 301 Continuous Blenders and Blending Systems
- Multiple Auger Bin Dischargers and Multiple Auger Bin Discharger Hoppering Systems
- Multiple Auger Bin Discharger Feeders
- Vibratory Bin Dischargers
- Model 500 Series of Polyelectrolyte Metering and Wetting Systems
- Water and Waste Water Treatment Systems
- Volumetric and Gravimetric Feeder Controllers and Control Systems
- Accessory Equipment for Acrison Products

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***Acrison... "a point of difference"***

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