

# POLYDOS 412A POLYMER PREPARATION SYSTEM

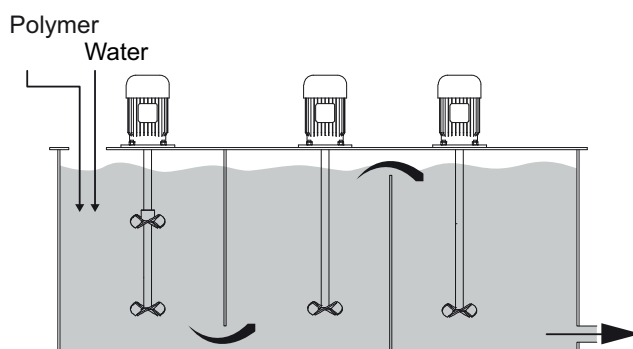
## Flexible, robust and economic

### General

Polydos 412A is a fully automatic system for the continuous preparation of polymer/PAM solutions. The polymer/PAM is diluted with water in a concentration set at the control panel. The maturing time of a polymer/PAM solution depends on the extraction quantity and the capacity of the Polydos system.

### Polydos 412A

- PPH or stainless-steel tank with 3 chambers for mixing, maturing and storage of the polymer/PAM solution
- Each chamber is fitted with an electric stirrer
- Dry-material feeding system for polymer/PAM
- Water inlet with shut-off valve, solenoid valve, pressure-reducing valve and flowmeter
- Jet mixer for dry polymer/PAM
- 7" true-colour touch screen with Siemens S7-200 PLC, multilingual
- Desired concentration of the final polymer/PAM solution adjustable between 0.05 and 0.5 %
- Viscosities up to 2500 mPas can be handled



### Features and benefits

- Jet mixer with injector-effect: Perfectly homogeneous dilution of polymer/PAM powder
- Plug-flow operating principle: Continuous operation with a siphon lock – fresh polymer/PAM cannot flow directly into the storage chamber
- Flexibility in tank material: Design for application
- Broad range of accessories: Design for application
- Flexibility of positioning: Flexible installation
- 7" true-colour touch screen with S7-200 PLC: Best accuracy in solution control
- Profibus-DP, Modbus, Ethernet: Flexible integration into central controls
- Contactless ultrasonic sensor for continuous level control in storage chamber: Reliable automatic process
- Perfect match with post-preparation equipment, e.g. dosing skid systems: Easy configuration and commissioning.
- Ability to engineer-to-order: Customers get custom-tailored solutions
- Shaftless screw: robust and non-clogging dry-material feeding

### Applications

- Drinking water treatment: Flocculation and sedimentation processes
- Waste water treatment: flocculation, flotation, precipitation and sedimentation processes
- Sludge treatment
- Treatment of process water and circulation water
- Pulp & paper industry, mining, power plants, etc.

## Technical data

Polydos	412A-500		412A-1000		412A-2000		412A-4000		412A-6000		412A-10000	
Maturing time [min]	45	60	45	60	45	60	45	60	45	60	45	60
Preparation capacity [l/h]	700	500	1300	900	2100	1600	4000	3000	6200	4700	10000	7500
Connection diameter: • Withdrawal • Overflow/drain • Operation water	DN 32 DN 32 DN 20	DN 50 DN 50 DN 20	DN 50 DN 50 DN 25	DN 50 DN 50 DN 40	DN 65 DN 65 DN 40	DN 65 DN 65 DN 40	DN 80 DN 80 DN 50					
Power consumption [kW]	50 Hz: 1.2 60 Hz: 1.4	50 Hz: 1.9 60 Hz: 2.1	50 Hz: 1.9 60 Hz: 2.1	50 Hz: 2.1 60 Hz: 2.5	50 Hz: 4.9 60 Hz: 5.7	50 Hz: 6.7 60 Hz: 8.3						
Material	Dry-material feeder and feeding screw: Stirrer shaft and impeller: Pipelines and connections:					Stainless steel 304 (AISI) Stainless steel 304 (AISI) uPVC						
Stirrer speed [1/min]	50 Hz: 900-970 60 Hz: 1110-1170											
Including	32 l hopper with vibrator, crane eyes, emergency stop, numbered wires, withdrawal pipe with valves for overflow and drain of chamber 1 and 2, capacitive sensor for dry material content, adjustable heating for dry material											

## Frequently asked questions

Why do polymers need to be prepared?	Polymers need time to unwind their chains, so they can catch more particles. Preparation processes change from one polymer to another. As an example, the maturing time can be anywhere from 10 minutes to 2 hours.
What is important in the preparation process?	The polymer is fed into a water jet mixer which breaks the powder into its fine particles ensuring every speck is wetted and dissolved. Polymer lumps or “fish-eyes” are avoided. It is then mixed with water and gently stirred while maturing.
How is the Polydos system designed?	The Polydos system has one tank with three separate chambers: 1. mixing, 2. maturing and 3. storage. The chambers are separated by a wall. As new mix fills the mixing chamber, the polymer already mixed is forced over the wall into the maturing chamber. In turn, the matured polymer flows over the wall and fills the storage chamber. This is called “continuous preparation”.
Why is Polydos better than batching system?	- Smaller footprint with space-saving design - Less reserve polymer is prepared - More accurate average maturation time - Easier to manage and service
What controls the operation of Polydos?	An ultrasonic level sensor in the storage chamber monitors the ready-to-dose polymer and starts the filling/mixing process on a low-level signal. It then stops the process on a high-level signal making it a fully automated process.
What is the operator required to do?	1. Ensure that feed water of potable quality is connected and turned on. 2. Maintain the supply of powder to the feeder hopper. 3. Regularly check that the feeder screw and jet mixer are clean.
How much polymer can be stored on a Polydos?	The standard dry-material feeder holds 32 litres, but extension hoppers are available to hold enough for weekly or longer filling routine. We also offer vacuum loader to ease the filling of polymer into the dry-material feeder.
How can I tell when the dry material feeder needs filling?	The feeder hopper has a capacitive sensor to detect a minimum powder level. The Polydos 412A sends out an alarm when the powder level is low, but before it is empty.
What other alarm signals do I get?	Four types of signal can be shown directly on control panel screen: 1. Motor failure 2. Circuit breaker failure 3. Low or high water flow 4. Dry run
How do I keep the powder dry?	Electric trace heating is wrapped around the feeder nozzle preventing the powder from absorbing moisture and keeping the inside of the jet mixer dry. The heating is adjustable.