# POLYSERIES (Polymer Preparation Unit)
## POLYCENDOS - PL SERIES - Tanks material PPH

**Technical characteristics**

- Variable capacity powder dosing unit with hopper or variable dosage using a liquid polymer dosing pump
- Complete water inlet group for visualizing and measurement of the water flow rate (also signaling the lack of flow rate) and water pressure (also signaling if the pressure level is dropped)
- Preparation tank divided in two or three sectors for dissolving, maturing and storage. Each compartment is covered
- Multiple versions of Electrical Control Panels in order to provide partially or fully automatic plant running.
- Solution dosage system can be flexibly tailored from our wide range of dosing pumps (ask for the specific catalogue)

***The PolySeries Range*** are automatic systems for the continuous preparation of polyelectrolyte solutions.

Polyelectrolytes are water soluble polymer carrying ionic charge along the polymer chain. Depending upon the charge, these polymers are anionic (positively charged) or cationic (negatively charged). Polyelectrolytes have a wide range of applications from water purification, to oil recovery, from color removal, to paper making and mineral processing. Polyelectrolytes are both flocculants as well as deflocculants depending upon the molecular weight.

A flocculant is essentially a solid liquid separating agent while a deflocculant is a dispersing agent. Polyelectrolytes are dissolved into water to form a solution that can agglomerate suspended particles with view to obtaining larger sized floccules and therefore a more rapid solid/liquid separation. Preparation of the solution, very often, has to be done continuously and automatically and must also be remotely controllable. Polycendos Range is a reliable response to these requirements. Constructed in multiple variants with different capacities, these systems can satisfy a broad range of needs using polyelectrolytes in both powder and emulsion form.

**How does it work**

The preparation tank is divided into three sectors: dissolving V1, maturing V2 and storage V3, interconnected by siphons that form a perfect flow between the tanks necessary for the formation of a top-quality solution. The polyelectrolyte from the dosing unit comes into contact with water, which is sprayed from a nozzle that ensures uniform dispersion of powder polymers and for liquid polymers the fluid is directly injected in the tank.
The water/polyelectrolyte mixture then drops into the tank where the dissolving phase begins. In this first dissolving sector V1, a slow agitator keeps the contents of the tank moving ensuring thorough homogenization of the solution. The siphon transfers the solution to the maturing sector, V2, where another slow agitator keeps the solution uniform until maturing is complete. Then the solution is then transferred to storage sector V3 from where it can be transferred for use.

## PPU - KEY CODE

| Field 1 | Field 2 | Field 3 | Field 4 | Field 5 | Field 6 | Field 7 | Field 8 | Field 9 |
|---|---|---|---|---|---|---|---|---|
| PL | 20 | B | D | P | 0 | 0 | 0 | 0 |

| | |
|---|---|
| Field 1 | model |
| Field 2 | size |
| Field 3 | control panel type |
| Field 4 | type of polyelectrolyte |
| Field 5 | material construction |
| Field 6 | third mixer in storage |
| Field 7 | hopper |
| Field 8 | vibrator in hopper |
| Field 9 | sensor level in hopper |

### Field 1 — model

| | |
|---|---|
| **PL** | *Polycendos* |

### Field 2 — size [l/h]

| size [l/h] | Maturing time: 30 minutes | 45 minutes | 60 minutes | 90 minutes | 120 minutes |
|---|---|---|---|---|---|
| **05** | 1000 | 750 | ***500*** | 333 | 250 |
| **10** | 2000 | 1500 | ***1,000*** | 667 | 500 |
| **20** | 4000 | 3000 | ***2,000*** | 1333 | 1,000 |
| **40** | 8000 | 6000 | ***4,000*** | 2667 | 2,000 |

### Field 3 — control panel type

| | |
|---|---|
| **W** | ***Standard - WITHOUT control panel(Junction box)*** |
| **B** | ***Standard - BASIC PLUS - Buttons, lamps, PLC*** |
| **A** | ***Standard - AUTOMATIC - PLC and HMI*** |

### Field 4 — type of polyelectrolyte

| | |
|---|---|
| **E** | *Liquid polymers (Emulsion)* |
| **D** | *Dual (Powder and Emulsion polymers)* |

### Field 5 — material construction

| | |
|---|---|
| **P** | ***Standard - Polypropylene High Density - PPHD*** |

### Field 6 — third mixer in storage

| | |
|---|---|
| **0** | ***Standard - WITHOUT third mixer*** |
| **1** | *Mixer in storage tank* |

### Field 7 — hopper

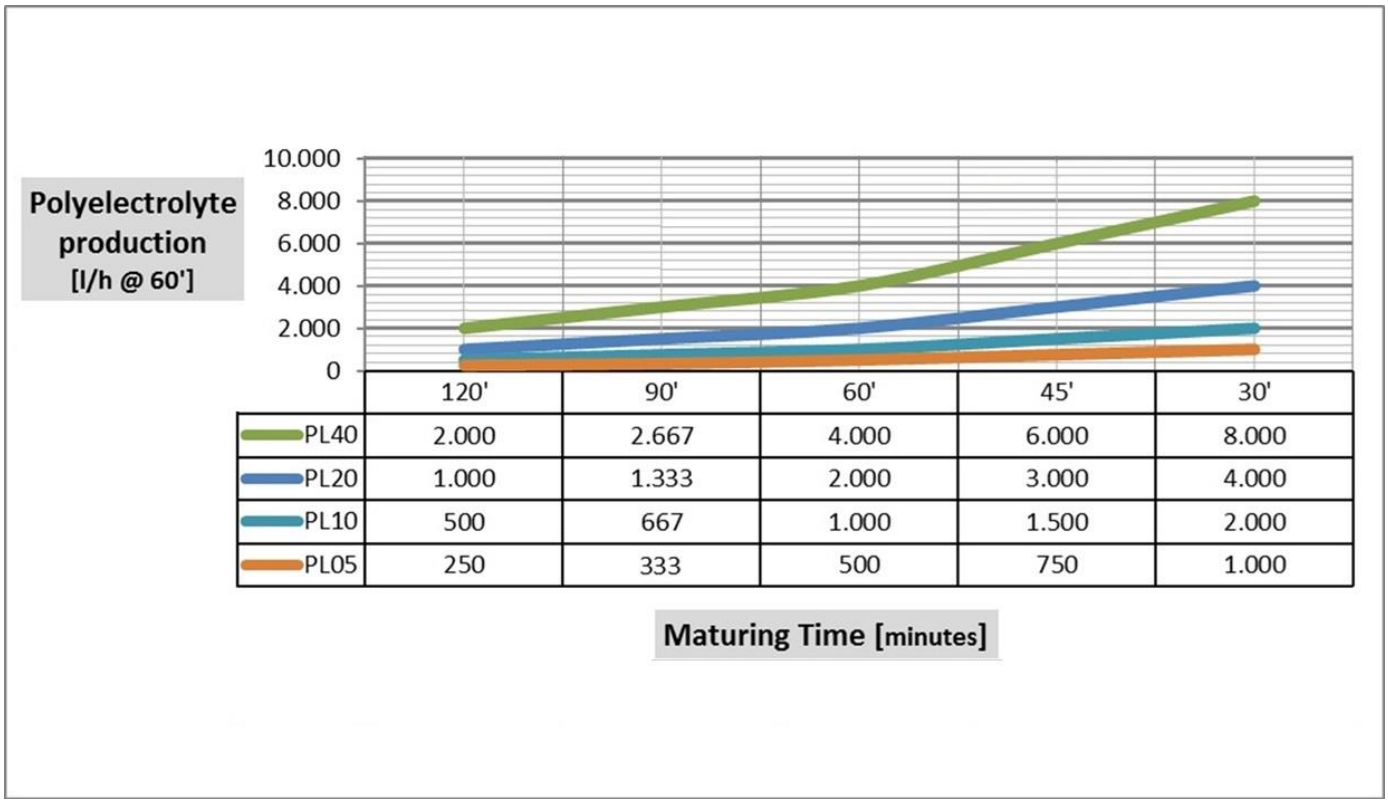
| | |
|---|---|
| **0** | ***Standard - HOPPER 60 liters with heating*** |
| **1** | *Extension hopper - 100 liters (for HOPPER - 60)* |
| **2** | *Extension hopper - 200 liters (for HOPPER - 60)* |
| **N** | WITHOUT HOPPER (the unit work with liquid polymers) |

| Field 8 | vibrator in hopper |
|---|---|
| **0** | ***Standard - WITHOUT vibrator in hopper*** |
| **1** | *WITH vibrator in hopper* |
| **N** | WITHOUT vibrator in hopper (the unit work with liquid polymers) |

| Field 9 | sensor level in hopper |
|---|---|
| **0** | ***Standard - WITHOUT sensor level in hopper*** |
| **1** | *WITH sensor level in hopper* |
| **N** | WITHOUT level sensor in hopper (the unit work with liquid polymers) |

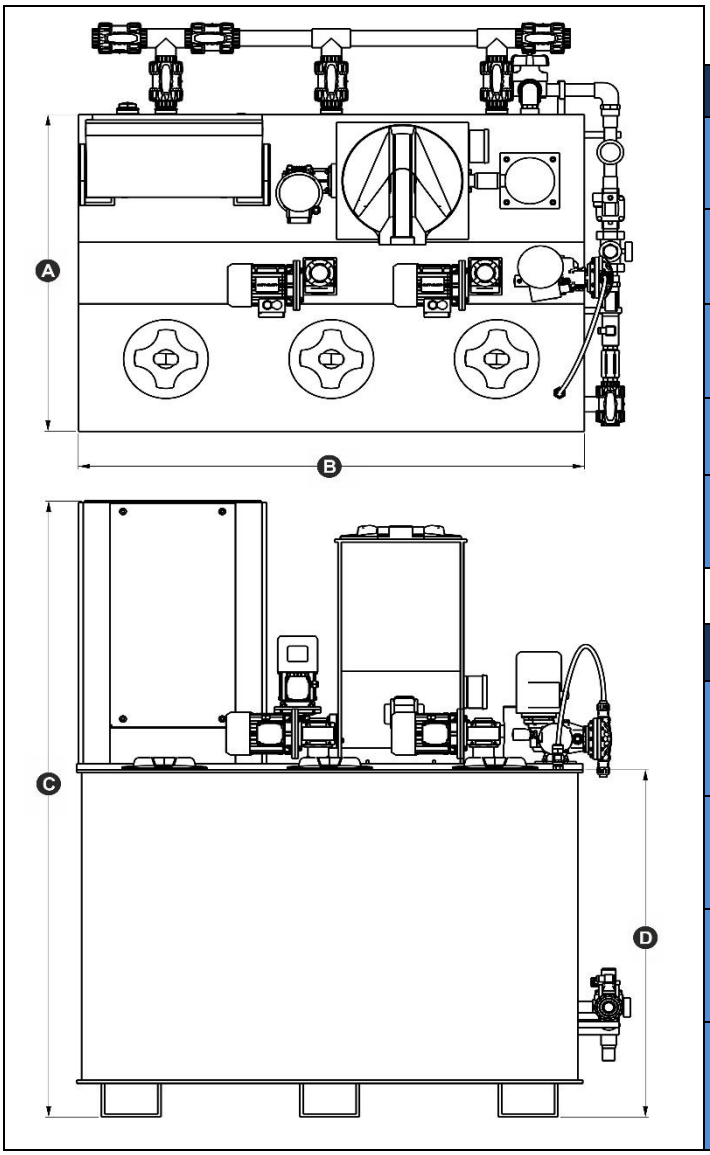
## Choice of Plant

The correct choice of plant and the full automation of the system means that solutions can be prepared in the correct concentration without waste and without in-line post dilution systems. Polyelectrolytes are available in both powder and liquid form and are considerably different, especially with regard to maturing time, which can vary anywhere from between 30 to 120 minutes. Therefore, proper consideration of maturing times needs to be made prior to capacity values being set.




| | 120' | 90' | 60' | 45' | 30' |
|---|---|---|---|---|---|
| PL40 | 2.000 | 2.667 | 4.000 | 6.000 | 8.000 |
| PL20 | 1.000 | 1.333 | 2.000 | 3.000 | 4.000 |
| PL10 | 500 | 667 | 1.000 | 1.500 | 2.000 |
| PL05 | 250 | 333 | 500 | 750 | 1.000 |

## Dimensions




| [mm] | PL05 | PL10 | PL20 | PL40 |
|---|---|---|---|---|
| A | 1.030 | 1.030 | 1.250 | 1.530 |
| B | 1030 | 1.530 | 2.050 | 3.030 |
| C | 1.800 | 2.000 | 2.050 | 2.050 |
| D | 920 | 1.120 | 1.170 | 1.200 |
| Water inlet | DN 25<br>1” | DN 32<br>1 1/4” | DN 40<br>1 1/2” | DN 40<br>1” 1/2 |

| [m³] | PL05 | PL10 | PL20 | PL40 |
|---|---|---|---|---|
| Total volume | ***0.78*** | ***1.45*** | ***2.45*** | ***4.7*** |
| dissolving | 0.39 | 0.48 | 0.81 | 1.56 |
| maturing | 0.39 | 0.48 | 0.81 | 1.56 |
| storage | --- | 0.48 | 0.81 | 1.56 |

## Notes:

- For the unit choice we will have also to consider the type of control panel and also the type of automation required
- There are 3 main types of control panels that we can choose from: Junction box (external control from the costumer), Electrical control panel Basic Plus (with buttons, signaling and manual and semi-automatic polymer - powder/liquid - dosage), Electrical control panel Automatic (with display and automatic polymer - powder/liquid – dosage proportionally with the water inlet flow rate measurement)