



## CONTINUOUS CYCLE FLOCULANT PREPARATION AND DOSING STATION

Saint-Petersburg, 2020



## PURPOSE

The station prepares a liquid flocculant from a dry polymer by means of an exact dosage ratio of the polymer and the supplied water with a delay of the technological preparation time with a polymer content in the solution of up to 0.25%, the volume of dissolution and dosing from 0.2 m<sup>3</sup> to 6 m<sup>3</sup> per hour.

The main unit of the FPDS station is a control cabinet (CC) with a programmable logic controller (PLC) and an operator panel.

The controller controls the actuators of the FPDS station according to the readings of the level sensors in the dosing tank and in the hopper of the auger batcher, as well as the water consumption in the water supply unit.

All actuators can be controlled in manual or automatic modes. Mode switching is carried out from the operator panel.

FPDS automated control system implements the possibility of supporting the processes of preparation and dosing of solutions without operator's participation.



## PRINCIPLE OF OPERATION

Powder is supplied into the dispenser through a screw dispenser, the water supply unit ensures the wetting of the powder flocculant, after which the mixture enters the dissolution tank.

In the dissolution tank, using a low-speed stirrer, the flocculant solution is stirred for a time set by the operator-technologist.

After the dissolution time has elapsed before feeding a new portion of the flocculant, the solution flows by gravity into the preparation tank.

The preparation process consists in settling with stirring using a low-speed stirrer for a certain time (the preparation time is determined by the operator).

Next, the prepared solution is supplied by gravity into the dosing tank, from where it is supplied to consumers using a pump (main/standby). A low-speed stirrer is also installed in the dosing tank.



## TECHNICAL SPECIFICATIONS

### Electrical supply network parameters:

- + supply network type: three-phase network  $\sim 380_{-10\%}^{+10\%}$  V
- + current frequency:  $50 \pm 1$  Hz;
- + power consumption: max 3.0 kW.

### Water supply network parameters:

- + water temperature, not less than 10 °C;
- + inlet water pressure, not less than 2.5 kg/cm<sup>2</sup>;

### FPDS station is intended for operation under the following conditions:

- + climatic design NF (for macroclimatic regions with temperate and cold climates), location category 4 in accordance with GOST 15150;
- + non-explosive environment, containing no aggressive vapors and gases in concentrations that destroy metals and insulation, not saturated with conductive dust and water vapors;
- + impact of mechanical factors as per M1 group, GOST 17516;
- + operating position of FPDS station elements is vertical ( $\pm 5^\circ$ ).



## ASSEMBLAGE

FPDS station consists of the following equipment



No.	Name	Q-ty
1.	Block of 3 tanks with overflow system: + dissolving tank (I); + preparation tank (II); + dosing tank (III).	1 set
2.	Dry matter dosig auger with auger heating	1 pce
3.	Dispenser (dry matter wetting unit)	1 pce
4.	Stirring device (stirrer)	3 pcs
5.	Dosing screw pump (working/standby)	2 pcs
6.	Level sensor in the flocculant dosing tank	1 pce
7.	FPDS control cabinet	1 pce
8.	Water heater	1 pce
9.	Water supply unit for dissolution	1 pce
10.	Installation frame	1 pce
11.	Removable ladder	1 pce
12.	Cable products, corrugated pipe, cable pipe, assembly fasteners	1 set



**THANK YOU FOR YOUR ATTENTION!**

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