SDP100

PLC CONTROLLED PUMPING STATION-3 TANK



Description

- **The equipment is delivered complete, instrumented with technical manual and practical work**
- **The system includes 3 tanks: well, buffer tank and water tower**
- **The buffer tank is fed by a stainless steel centrifugal pump**
- **The water tower is powered by 2 stainless steel centrifugal pumps**
- **The consumption is adjusted by 2 leakage flow solenoid valves flowing into the lower tank (well)**
- **The cycle is managed by a programmable logic controller**

Experimental capabilities

- **Study of the concept of a lifting unit**
- **Measurement of level parameters**
- **Pump rotation, maintenance management**
- **PID type control on frequency converter or TOR**
- **Programming on PLC**

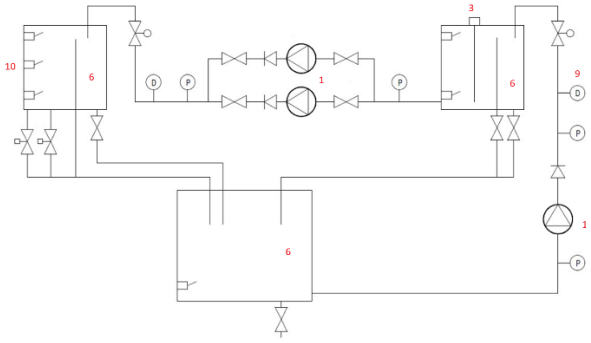
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Operating principle

The principle of the bench is to study the concept of a pumping station and to simulate the operation of a water tower. It is equipped with three reservoirs: the well, the buffer reservoir and the water tower. The objective will be to maintain a certain level of water in the two upper tanks. For this we have a pump (on variable speed drive), to supply the buffer tank. This comprises an analog level sensor and 2 level detectors: minimum and maximum.
In addition, two centrifugal pumps supply the water tower. This tank has 3 level detectors: minimum, intermediate, and maximum. The bench is fitted with a programmable logic controller for performing several functions. Students can select different regulation methods Digital or PID.
The bench is also equipped with a supervision computer by means of a touch screen with Didatec interface included.
The robust design of this equipment makes it perfectly suited for use in schools.
Its anodized aluminum frame with legs gives it great strength as well as great flexibility of integration into your premises. The manufacturing of this equipment meets the European machine directive.

Illustrations



The bench is installed on an aluminum profile structure equipped with four braked-directional castors.
The bench also includes a power supply box with RCD, emergency stop and master disconnector.

1. 3 identical multistage pumps
- Stainless steel body, wheel and axle
- 4m3/h maximum,

2. Frequency inverter
- Programming keyboard
- Setpoint input from the PLC

3. Analog Level Sensor
- Tige capacitive
- Output 4-20 mA

4. Schneider PLC
- Model TM 221
- Digital input - digital output
- Analog inputs
- Supplied with programming software and link cable
- Possibility of literal or contact programming

Technical details

5. Security features
- 30 mA RCD
- Low and high level detector

6. Tank
- Well: Polypropylene, capacity 150L
- Buffer tank: Polypropylene, capacity 60L
- Water tower: Polypropylene, capacity 60L

7. Programming touch screen
- Control mode selection: PID or TOR
- Characterization of pump states by color
- Real-time graph of contour lines: setpoint and measurement
- Alarms page: description and acknowledgement

8. Current and voltage measuring sleeves
- Measurement of the current and voltage of each supply phase
- Portable multimeter included

9. Electronic Flow Meter
- Vortex 9-150L/min

10. Digital Level Controller

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version : FT-SDP100-STD-F

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Services required

- Power supply: 400 VAC – 50 Hz – 16 A Power supply type: 3 phases + Neutral + Earth.
- Water supply: 15 L/min – 3 bar (filling)
- Water drainage: at ground level
- Dimensions : (LxlxH mm) : 1800 x 790 x 1780
- Weight (Kg) : 190

Note: In the context of an installation of the equipment by our services, all connections to the networks must be located within 2m of the machine

Documentation

- Instruction manual
- Documentation technique
- Practical work
- Electrical diagram
- Hydraulic diagram
- Software: SoMachine
- CE Certificate of Conformity

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