

## Aguas de Barcelona

Safe	★★	
Reliable	★★★	95% availability
Efficient	★★	10% savings on pumping
Productive	★★	10% productivity

### I. CUSTOMER ENVIRONMENT / PROJECT CONTEXT

#### Customer profile:

This pumping station, owned by Aguas de Barcelona, supplies half of the city (more than one million inhabitants).



#### Customer objective and constraints:

- Reduce the electrical stress on the distribution network and motors;
- Reduce the mechanical stress on pumps and pipes;
- Improve monitoring of the pump behavior and status.

## II. SOLUTION IMPLEMENTATION

- Ecostruxure

> Schneider Managed Services  
> Schneider Managed Services



### Power Systems

- Local LV/MV protection & control
- Power quality



### Process Systems, Machine Control

- Process control
- Pumping

### Implementation methodology (main phases):

- Meeting with operators to define technical specifications and good practices to be respected in the control of the pumping station;
- Elaborate control architecture;
- PLC programming;
- Commissioning of MV soft starters;
- Adjustment of Control and Power parameters.



### **Solution overview (services, products, systems, architectures...):**

This was the first implementation of Medium Voltage soft starters in Spain. Several issues had to be solved, such as the adaptation to the local requirements, set-up of communication architecture, adjustment of the different alarm functions.

Schneider Electric equipment:

- 4 Motorpact MV Motor Starter RVSS
- PLC Modicon Premium
- Advantys I/O Module
- Magelis tactile color screen XBT-GT 10"

Architecture:

- 4 RVSS Motorpact MV motor starters situated in the MV room;
- Remote control system realized by a Modicon Premium PLC situated in the motor room;
- Motor starters and PLC are interconnected via Ethernet connection.

The Modicon Premium PLC connected to the 4 pumps manages all the pump parameters: levels, fluxes, vacuum systems, pressures, motorized valves, in/out motor temperatures and bearing temperature. It receives the start / stop orders from the control room and send them to the Motorpact motor starter. It controls the communication between Sepam memory registers and power electronic control CPU. The web server based TSX-WMY100 module allows direct access to the system data: operator screen emulation, consumption data, yields and statistics data.

The operator visualizes the system data thanks to the Magelis tactile color screen XBT-GT de 10". It is connected to each Motorpact cubicle via Ethernet and allows monitoring the application functional diagram, the protections, the alarms, the process signal configuration and communication status.

## **III. RESULTS / ACHIEVEMENT**

**Customer benefits:**

- Better monitoring of the pump behavior and status;
- Lower starting current;
- Reduce electrical stresses on the network and the motor;
- Reduce peak starting torque stresses on both the motor and mechanical load components.

**Schneider Electric differentiating values VS competitors:**

- Complete offer: MV soft starter (Motorpact), PLC (Modicon Premium), HMI (Magelis tactile colour terminal);
- Local project team.