

Telemecanique w@de range

W320E application sheet

Remote management of the City of Bucharest

ROMANIA - APA NOVA



General overview of the project

The company APA NOVA produces and distributes potable water to its customers via lifting stations.

The purpose of this project is to provide continuous monitoring of the 40 pumping stations needed to obtain continuously a minimum pressure in the second lifting network of the City of Bucharest.

This project chiefly involves setting up a remote management system to enable, in the short and medium term, continuous monitoring, at various locations on the APA NOVA network, of qualitative, quantitative and technical data concerning the operation of certain entities forming part of the operation of the water production and distribution network of the City of Bucharest.

Project rationale

For APA NOVA, remote management is considered as essential factor inherent to good management of fresh water and waste water facilities.

For the operator, remote management means a big improvement in the following major aspects:

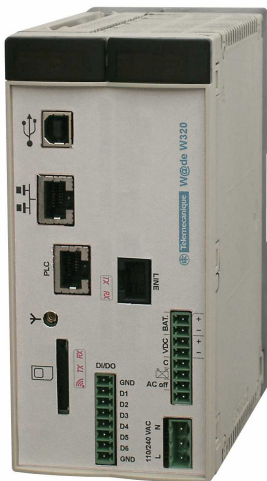
- Continuity of service, by immediately detecting a major technical incident before the fault can be observed by APA NOVA's customers.
- Profitability through the optimization of servicing operations and operating costs.
- Control of consumption by perfectly controlling the facilities' operating parameters.
- Traceability of incidents and the related repair operations.
- The establishment of effective preventive and corrective maintenance.
- Increased quality of service.
- Dependability.

Remote management

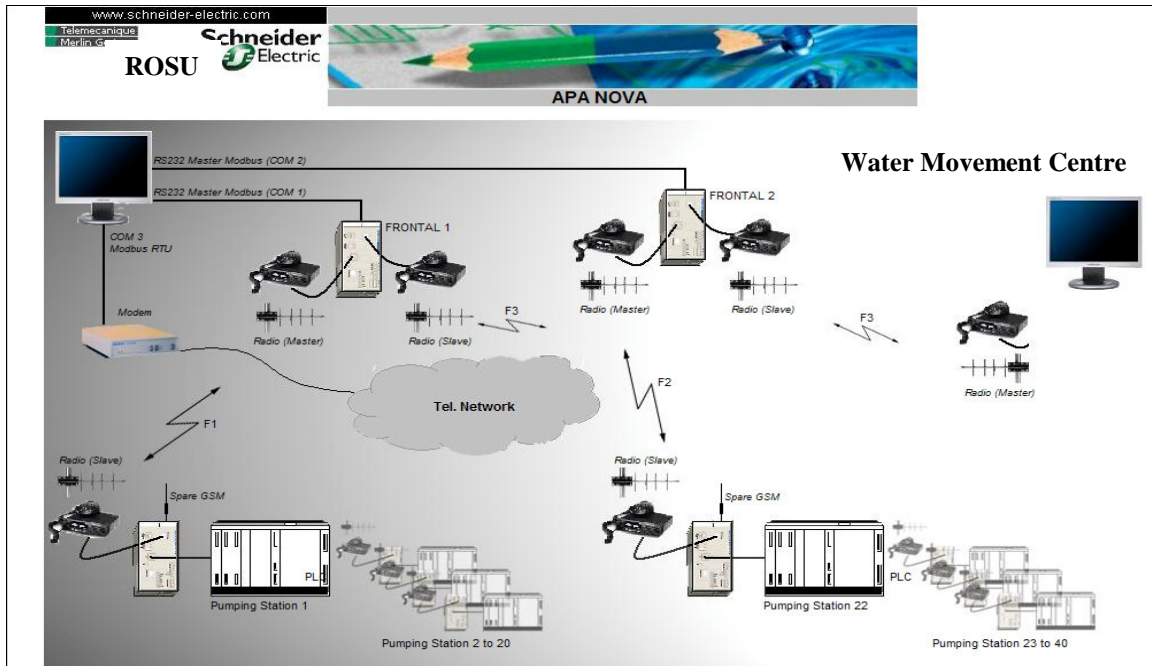
All the stations are managed by 2 **W@de W320E** communication front ends, each of them controlling half of the pumping stations.

- Front end 1 for stations 1 to 20 on radio frequency F1
- Front end 2 for stations 21 to 40 on radio frequency F2

Each of the 40 pumping stations in the network contains a programmable logic controller performing the process for the structure on which is located a **W@de W320E** remote management equipment item connected to this PLC via a MODBUS RS485 link.



System architecture



The architecture of the remote management system is organised around 2 TOPKAPI supervisor systems, the chief of which is installed in the ROSU central production control station. However, it is possible to perform the same functions from a second remote station, located in the Water Movement Centre, whose database mirrors the main station, thus allowing backup of structure supervision at any time, especially in case of any radio transmission problems on the main supervisor.

The communication mode between the front-end processors and the associated stations is a MODBUS radio polling mode allowing data acquisition following a polling period not exceeding 10 minutes. The data archived in the front ends are then made available to the main supervisor via a permanent RS232 link for updating of the database and animation of the mimic panels.

The database of the backup supervisor is updated upon cyclic polling of the communication front ends via the radio communication medium on frequency F3.

All the communication functions are performed via two redundant media:

- Normal radio medium for:

- **Data updating (states/indications/alarms)** in real time on the supervisors by constant polling of the front-end processors.
- **Remote controls**, in the same way as before, to perform operations.

- GSM backup medium to:

- **Ensure communication** in the event of unavailability of the radio network so as to perform the functions described above.
- **Trip standby duty calls** upon the occurrence of an alarm, to an SMS and/or the supervisors.

The processing functions performed by each Wade W320E allow:

- **- Time tagged recording of events and alarms** for processing by the supervisor during communication.
- **- The provision of data** saved in the form of database management system text files in order to print statistical reports and balances.