



## PROCESS INSTRUMENTATION

**SITRANS LT500 HydroRanger controller** monitors plant influent, basin-to-basin flows, and wet wells

[usa.siemens.com/level](https://usa.siemens.com/level)

### Challenge

In today's economic environment, local municipalities need to control their budgets more than ever. In an effort to save time and money, many small-to-medium water and wastewater treatment plants are striving to increase efficiency while controlling design and maintenance costs.

A wastewater treatment plant on the East Coast of the United States wanted to improve the monitoring of in-plant flows by keeping track of the retention time in basins throughout the process.

### Solution

To achieve their goals, plant staff relied not only on their in-house knowledge, but also on the expertise of their suppliers. Working closely with an integrator, the local Siemens representative specified the new and evolved SITRANS LT500 HydroRanger controller with the SITRANS LR110 radar sensor to accurately monitor all open-channel flows from basin to basin. The LR110 was also chosen to measure the levels in their day tanks and storage vessels.

**SIEMENS**



*SITRANS LR120, LR110 and SITRANS LT500 HydroRanger level controller.*

For the more challenging applications, the LT500 HydroRanger controller with the SITRANS LR120 radar sensor was selected to monitor and control on-site wet wells.

The LT500 HydroRanger with Process Intelligence gave the customer the right answer even in applications with changing conditions. Using the available signal outputs from the LT500 HydroRanger, all flows were tracked by the control system. With tighter control, money was saved in many ways, including shorter retention times, less chemical usage, and reduced dewatering efforts.

When working with the on-site wet wells, the flexible pump routines that are available with the LT500 HydroRanger came into play. Pump routines were selected that allowed the user to save electricity costs and to extend pump maintenance intervals. Pump life was extended by applying lead-lag and alternation routines. Wet well maintenance for plant personnel was also reduced by using the "scum ring reduction" function available in the LT500 HydroRanger.

Measurement reliability was very important to the customer. At the beginning of the project, the integrator had a long-standing relationship with another supplier of level and flow measuring instruments. After working with the local Siemens representative, the integrator decided to look into Siemens products at other installations. The integrator discovered the value in Siemens, as a full automation company, and its products. With fewer unpaid service calls about products not performing correctly in changing process conditions, eliminating downtime meant savings not only for the end user, but for the integrator as well.

### **Benefits**

#### **Cost savings:**

- Tighter system control saves time and money by reducing process retention times, chemical usage, and dewatering efforts.
- Flexible pump routines reduce electricity costs and extend pump maintenance intervals.

- Reduced downtime means savings for the end user and the integrator.
- Process Intelligence provides the correct answer even in applications with changing process conditions.
- Increased measurement reliability means fewer service calls.

#### **Local service and support:**

- Service and support are available in your neighborhood. Siemens' extensive global coverage means you get support when and where you need it.

#### **About the SITRANS LT500 HydroRanger level controller**

SITRANS LT500 HydroRanger is the next evolution of digital level, flow, and pump controllers for radar and ultrasonic transmitters – or any 2-wire 4-20 mA device. It is designed for radar sensors operating at 80 GHz, with options for single- and dual-point measurement; up to 6 relays; and options for Modbus RTU, HART, PROFIBUS DP, PROFIBUS PA, and PROFINET.

For water authorities, municipal water, and wastewater plants, the LT500 HydroRanger is an economical, low-maintenance solution that delivers control efficiency and productivity needed to meet today's exacting standards. The LT500 HydroRanger controller monitors level and open channel flow. It features advanced relays for alarming and pump control functions, volume conversion, and data logging of process values and parameters. It also includes almost 200 real-time and simulated diagnostics. Setup is easy via the HMI display with local four-button configuration and wizard support for key applications. Process Intelligence advanced echo-processing software provides increased measurement reliability even under demanding process conditions.

#### **Legal Manufacturer**

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