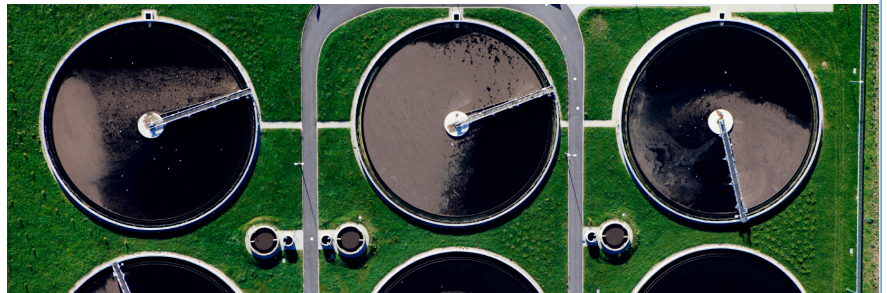


Sewage Treatment



Wastewater Treatment Plant Hrádek nad Nisou

Investor: City of Hrádek nad Nisou
Country: Czech Republic
Year of implementation: 2012

The communities of Hrádek nad Nisou (Czech Republic) and Bogatynia (Poland) invested in extensive upgrade of the local water treatment facility including new automation and control system to process more sewage and gray water effectively and reliably.

The new control system was equipped with MicroLogix 1400 PLC made by Allen-Bradley. The challenge was to find a reliable SCADA system that would provide the operating personnel with advanced visualization and enable remote access to the technology, SMS notification, alarming and data logging. mySCADA Box met all the requirements of the client and was implemented on top of the new control system.

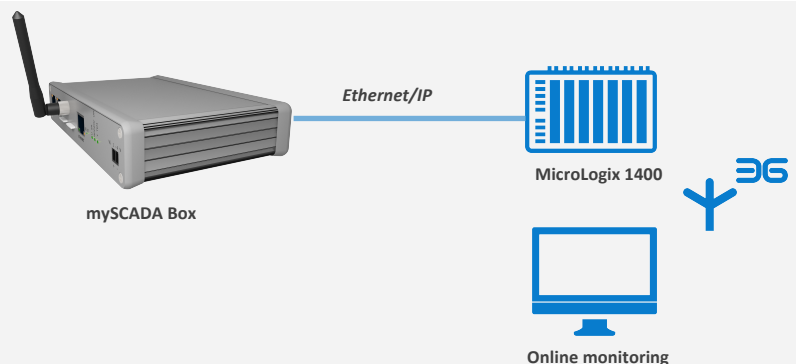


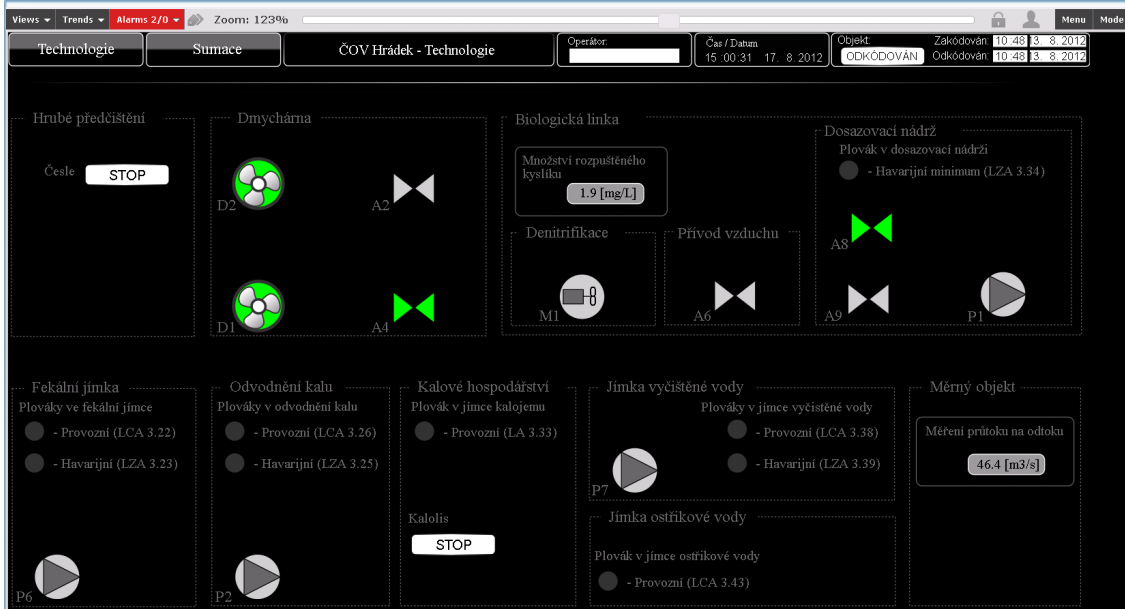
mySCADA Box

- advanced HMI interface
- multiple PLC protocols
- data logging up to 28mio of records
- complex alarm system
- trends, reports, data analysis
- secure user access
- visual programming
- box side scripts
- integrated secure web server
- advanced routing options
- 3 types of VPN tunnels
- remote access
- integrated 3G/4G modem
- CISCO VPN compatible

HARDWARE PARAMETERS

Dual core 1.0 GHz CPU (Cortex A9 with ULP GeForce GPU)
512 MB DDR RAM, 1GB industrial NAND Flash
up to 3x10/100 Mbit Ethernet interface
up to 4xRS232 and 2xRS485 serial ports
micro SD card
3G/4G modem with dual SIM option
12-48 VDC
Industrial temperature range on request

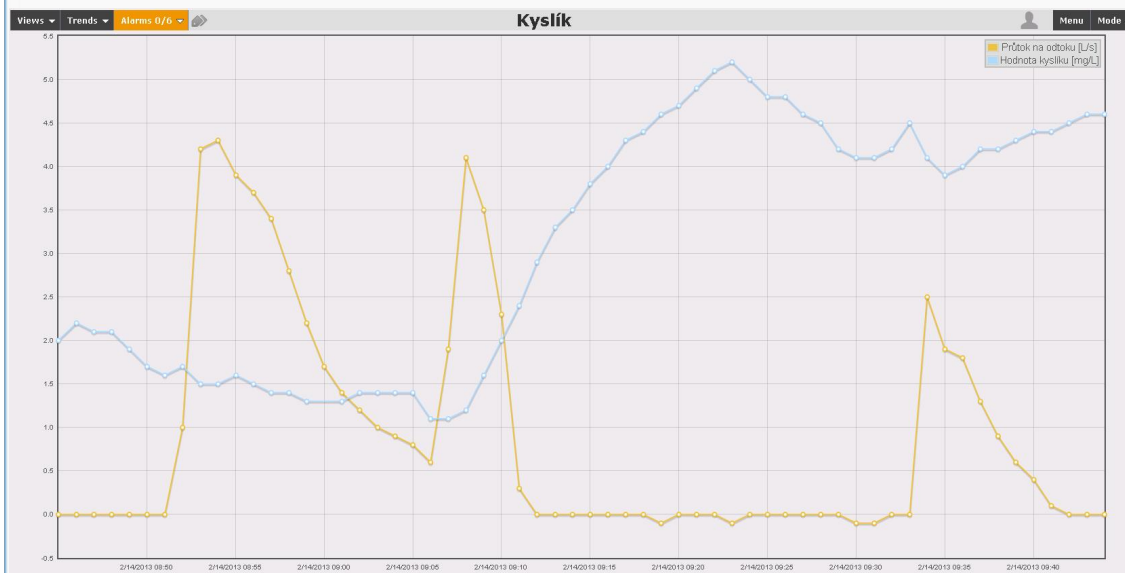




MAIN SCREEN – Technology Overview

- Online status on technology components
- Number of alarms (2 active and 0 unconfirmed)

To switch between automatic and manual mode, or to set individual parameters click with the mouse on individual action component (motor, valve, etc.).



CHARTS - Trends

The chart on this screen displays the time trend of measured value "Oxygen/Kyslík"

The time range of the displayed chart can be set at the bottom of the screen – 5 minutes, 10 minutes, 20 minutes, 30 minutes, 1 hour, 2h, 3h, 6h, 12h, 1 day, 2 days, 1week.

The "Mode" button enables to switch between online and history mode.

Active time	Severity	Message	Value	Deactive time	Acknowledge time	Acknowledge all
1 02/13/2013 15:24:19	1	Objekt odkodován	0	02/14/2013 08:10:07		Acknowledge
2 02/12/2013 22:31:12	1	Sdružený alarm závazná porucha - OK	0	02/13/2013 09:15:42		Acknowledge
3 02/12/2013 22:30:12	1	Cerpadlo dosazovací P1 - OK	0	02/13/2013 09:15:42		Acknowledge
4 02/05/2013 22:16:00	1	LL měření kyslíku - OK	0	02/05/2013 22:19:53		Acknowledge
5 02/05/2013 15:15:29	1	Frekvencní měnič - OK	0	02/05/2013 15:16:37		Acknowledge
6 02/05/2013 15:15:25	1	Napájení - OK	0	02/05/2013 15:16:37		Acknowledge

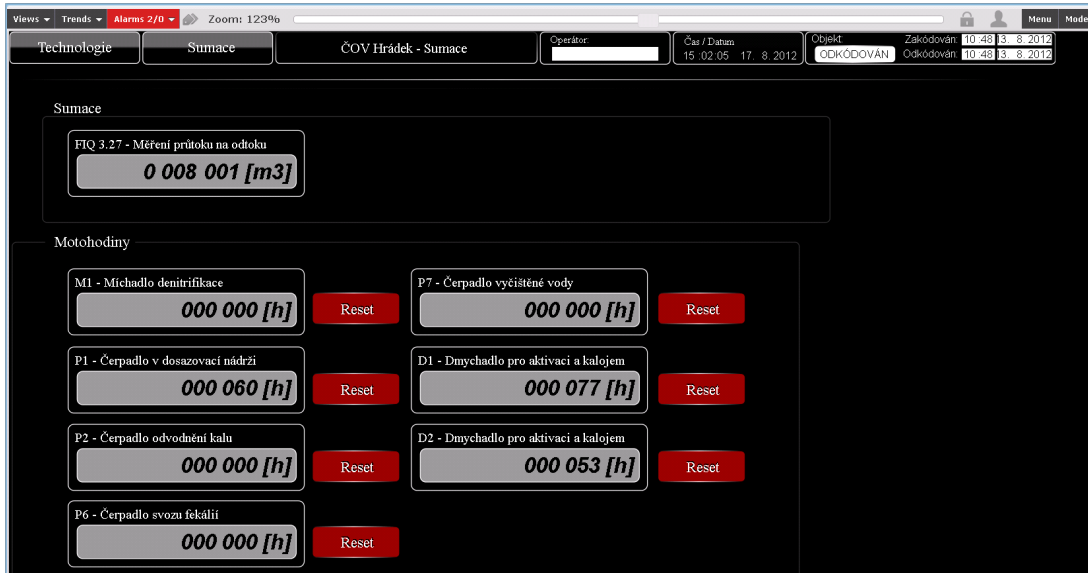
ALARMS

- Active time: date and time of the alarm
- Message: alarm description set by the user
- Deactive time: time of alarm deactivation
- Acknowledge time: time the operator confirmed the alarm

RESULT

The main benefit for the client is that the water treatment plant is monitored 24/7 and the history of all operation data can be retrieved on request. In alarm situation the staff gets a notice and therefore does not have to supervise the plant all the time. mySCADA Box automatically sets alarm activation values and e-mail/SMS notification to the pre-defined numbers and e-mails. The authorized personnel monitor and control every layer of the plant in real time with a usual PC connected to the Internet placed at a remote operators room. To ensure that the water leaving the plant meets all the environmental standards and expected criteria is now really easy.

After the technology modification and upgrade, running the plant is more manageable and precise - all information the operators need is at their fingertips at any time and no matter where they are.

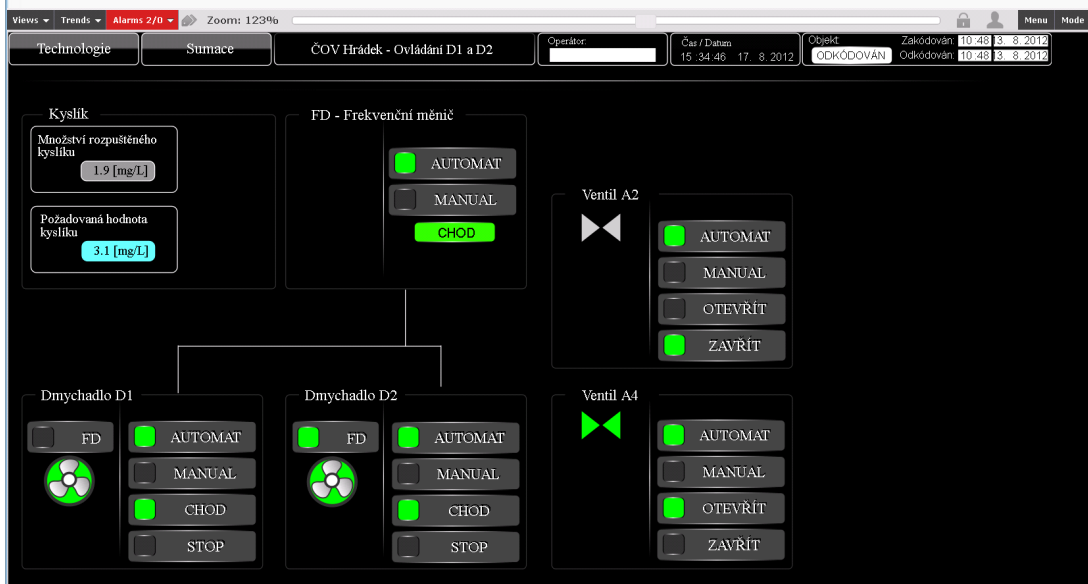


SUMMATION

This screen displays information about:

- flow rate at the water outflow
- hour runtime of individual motors (M1,P1,P2,P6,P7,D1a D2)

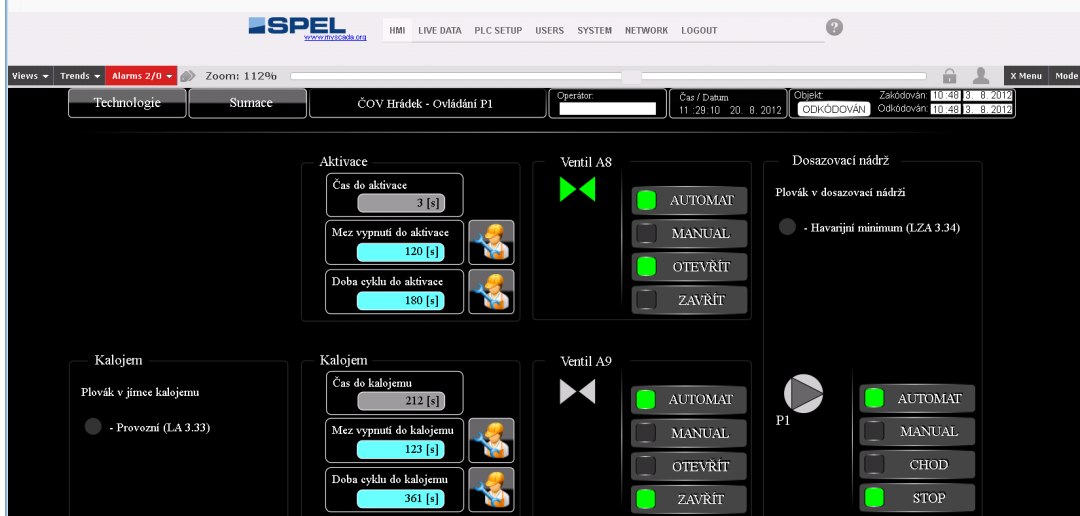
The button Reset enables to reset the counters, the authorization to perform this operation can be secured in user access setting.



Blast engine D1 control

This screen shows details of the technology, such as control buttons of blast engines, valves and frequency converter that can be controlled from this screen.

The blast engines, valves and frequency changer can be switched (by click on the button) from automatic to manual mode.



Sludge pump P1 control

This screen shows the control buttons of the sludge pump and valves A8 and A9.