

Oil and Gas



Customer: MND a.s., Mr. Vilem Frolka
Country: Czech Republic
Year of implementation 2012



24/7 Diagnostics of Gas Drying Unit

MND Group is the largest company in Czech Republic specialized in exploring, searching and extracting crude oil and natural gas and the owner of the Uhřetitz UGS. MND also constructs and operates underground gas storage facilities that feature high flexibility and fully automated control system. Its business activities are spread all over the world, mainly in Europe, Near and Middle East, in North Africa and other countries. The company holds 13 exploration licenses for territories around the world.

MND detected a problem in the distant underground gas storage, mainly in the gas drying unit suspecting pressure losses in the refrigeration system. The company looked for a suitable solution enabling 24/7 remote diagnostics and data logging of the drying unit to confirm any spurious pressure fluctuation and other uncommon failures. Mr. Frolka, technician of MND: "We looked for a logging device that could be easily and quickly installed into the current control system. We knew there was a problem, but we could not diagnose it without constant contact with the system".

Configuration



Online monitoring

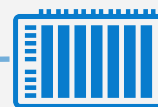


GSM 3G



mySCADA Box 3G

Ethernet / IP



ControLogix PLC



SOLUTION - REMOTE DIAGNOSTICS

MND decided to equip the existing control system with mySCADA Box 3G. A Ethernet/IP connection between the ControLogix PLC and mySCADA Box was established without need to shut the system down. It was necessary to log the data from 7 gas pressure convertors and 2 temperature sensors. Data were logged with 1-second precision with hysteresis detection. mySCADA Box was capable to log into its internal memory over 28 000 000 of analog values to achieve data history of more than 5 years of continuous system monitoring.

GSM 3G module of mySCADA Box allowed for secure connection from remote PC without need for additional infrastructure. Such connection made possible to monitor online actual and historical data from the controller. With the freely available reporting software myREPORTS this data could be displayed in graphic form and transferred into reports to perform advanced diagnostics.

mySCADA Box

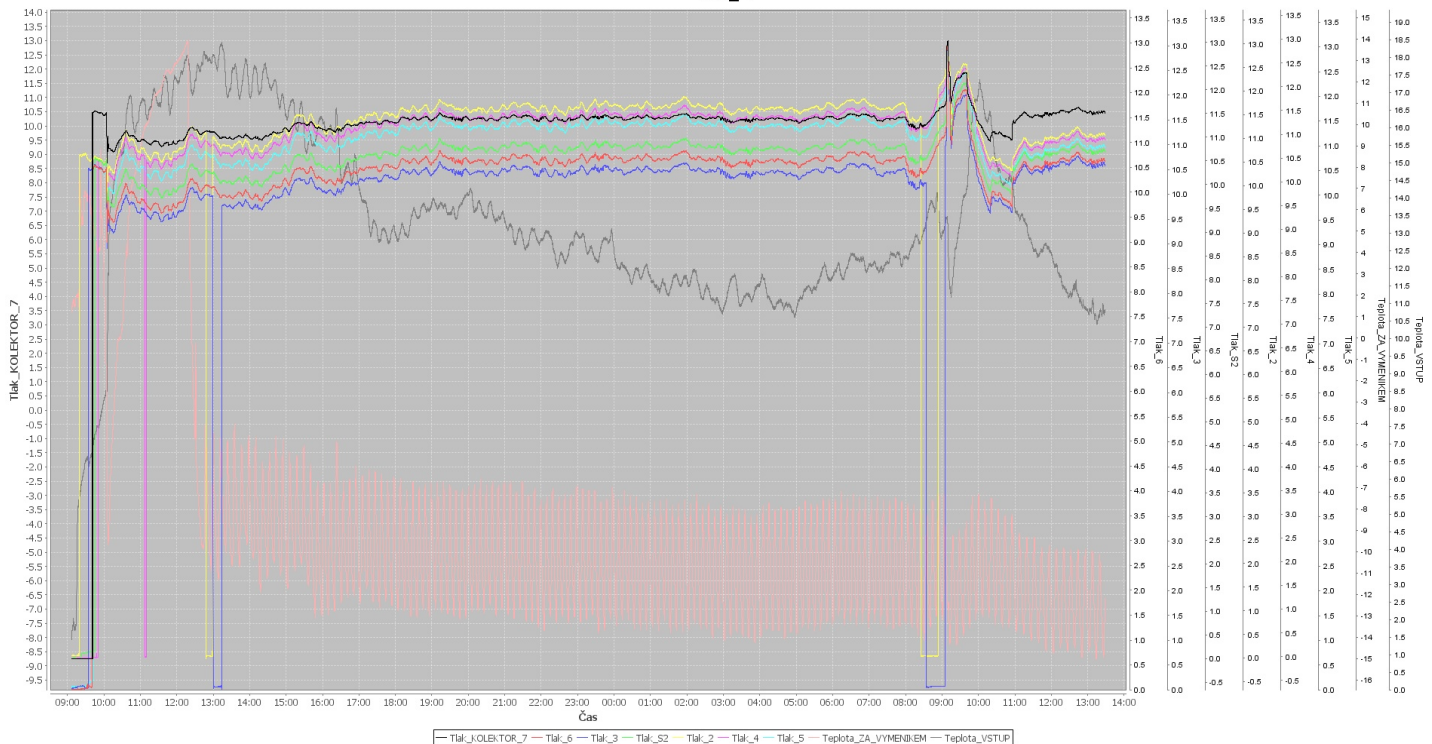
- advanced HMI interface
- multiple PLC protocols
- data logging up to 28mio of records
- complex alarm system
- trends, reports, data analysis
- secure user access
- visual programming
- box side scripts
- integrated secure web server
- advanced routing options
- 3 types of VPN tunnels
- remote access
- integrated 3G/4G modem
- CISCO VPN compatible
- M2M Gateway

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

..MND equipped the control system with mySCADA Box 3G to online monitor and log the system data...

DLG_1



RESULT

Frolka: "We diagnosed a short periodic pressure loss at 9:00 in the morning as shown in the report below. With a single click we got an overview of the system performance. This information was very helpful - we detected the technical problem and configured the system to the maximum consistent performance."

MND use mySCADA box on periodic basis for online monitoring and statistical evaluation of their control systems.