

PROCESS MONITORING SYSTEM FOR EXPLOSIVES MANUFACTURING

AUTOMATED SOLUTION MEASURES MULTIPLE PARAMETERS



[dataTaker](#) provided the process monitoring solution for a mining company with a unique application. Explosives for the mining industry are manufactured with a range of specified properties intended for particular uses. Nearly all of them contain ‘Nitropril,’ an explosives-grade [ammonium nitrate](#). The industry’s requirements can only be met by manufacturing the ammonium nitrate to high-quality standards regarding water content, porosity, bulk density, and the type of surface coating applied to the spherical granules. Most importantly, for ease of handling, the ammonium nitrate must flow freely and not cake.

To ensure comprehensive monitoring for its explosive manufacturing processes, the mining company required a remote process monitoring system. They requested modern integration for easy data retrieval, along with software featuring analysis capabilities.

DATA TAKER DATA LOGGERS

1. Cost-effective data logging solutions
2. Capable of measuring and logging DC voltage, current and resistance sources in addition to digital signals
3. Suitable for small- to large-scale applications
4. Rugged design and construction provides reliable operation under extreme conditions

AUTOMATED PROCESS MONITORING SOLUTION

The plant sourced a [dataTaker Series 4 DT80M Data Logger](#), a full-featured low-powered logging platform with an integrated cellular modem making it ideal for their needs. Users can connect an array of sensors through the versatile analog and digital channels, high-speed counter inputs, phase encoder inputs and programmable serial sensor channels.

Additionally, the rugged design and wide operating temperature range of the DT80M provides reliable operation in virtually any environment.

Sensors Used

- RTD temperature sensors
- pH Sensors
- Flow meters
- Pressure Gauges

MULTI-VALUE LOGGING

The dataTaker data logger was used to record Temperatures, Airflow, pH and Pressures at the plant. Pressure recording is a vital element here owing to the plant's pneumatic control systems.

The mine's lead technician configured the data logger for each of his tests. The dataTaker logger provided a convenient, single instrument for recording data simultaneously from many sensors, along with ability to later retrieve the stored information.

REMOTE MONITORING CAPABILITY

The recorded data was then transferred to computer, either by modem for interstate data download or by downloading directly into a computer at the plant. Technicians now utilize the DT80M's automatic data delivery features

to schedule data to be automatically emailed to their inbox every week.

User-set alarm conditions can also trigger specific data delivery in addition to sending alarm messages to multiple email addresses or mobile phones.



SOFTWARE PRESENTS DATA AS GRAPHS AND TABLES

The DT80M modem datalogger is configured directly in a web browser using dataTaker's dEX graphical interface. dEX takes users through configuration of the logger, allowing them to decide – in as much or as little detail – how they want the system to work. This is especially convenient for new users.

Using the internal modem, operators can also reconfigure their dataTaker system remotely over the internet if required.

BENEFITS

A leading research scientist with a 200-strong research group in Melbourne handled this job of recording and analyzing the data describing the processes for manufacturing 'Nitropril'. The group had three decades of research experience on industrial explosives.

As a result of the study, the mining company has since introduced improved process control systems at the plant. These improvements formed part of a program to upgrade total quality control. Production of 'Nitropril' has thus been simplified, thanks in part to the dataTaker's multi-value data collection.

For more info on the [dataTaker DT80M Modem Data Logger](#), a process monitoring system or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.