

Application Note – To improve process control systems at an explosives manufacturing plant

Customer Requirements

Explosives for the mining industry are manufactured with a range of specified properties for particular purposes. Ammonium nitrate is a major component in nearly all of them. 'Nitropriil' is explosives-grade ammonium nitrate. The industry's requirements can be fully met only by manufacturing the ammonium nitrate constituent to exceptionally precise quality standards for 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.



Equipment

DT500
DeLogger™ 4 Pro
Modem

Sensors

RTDs, pH, Flow meters, Pressure Gauges,

Datataker Solution

The *dataTaker DT500* logger was used to record temperatures, airflow, pH and pressures at the plant. Pressure recording was a vital element as control systems at the plant are pneumatic.

The client configured the data logger precisely for their tests. The *dataTaker* logger provided a convenient, single instrument for recording simultaneously from many sensors, along with ability to later retrieve the stored information. The recorded data was then transferred to computer, either by modem and STD telephone line interstate, or by downloading directly into a computer at the plant.

A leading research scientist with a 200-strong research group in Melbourne handled the job of recording and analyzing the data describing the processes for producing 'Nitropriil'. The group had three decades of research experience on industrial explosives. As a result of the study, the company has introduced improved process control systems at the plant.

The improvements formed part of a program to upgrade total quality control. Production of 'Nitropriil' has been simplified, following a review of one of the key parts of the process.

[If you need more detail on this application please contact joyce.reid@datataker.com.au](mailto:joyce.reid@datataker.com.au)

Datataker Pty Ltd - 7 Seismic Court Rowville Victoria 3178 Australia
Tel: 03 9764 8600 +61 3 9764 8600 Fax: 03 9764 8997 +61 3 9764 8997
E-mail: sales@datataker.com.au Web: www.datataker.com