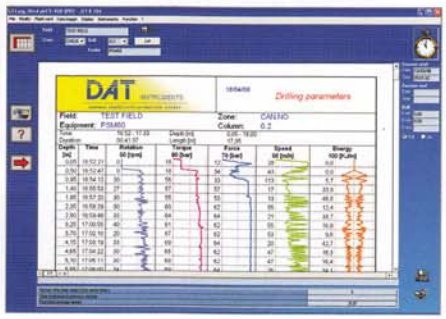
Right: JET 4000 AME datalogger

Far right: the datalogger can stop the rig when the required depth is reached

Right: JET Depth sensor

Far right: DAT instruments' JET S 104 software



Taking control

Effective dataloggers can optimise drilling practices. Amedeo Valoroso, DAT instruments CEO, explains more

Q What drilling-related industries do your systems serve?

DAT instruments designs and sells dataloggers and software for drilling and foundations: from grouting to permeability tests of the ground, from jet-grouting to drilling, soil mixing, CFA and diaphragms. Clients are companies involved in site investigation or in drilling.

All the products are easy to use and are quickly shipped worldwide with the offer of technical assistance.

This, however, does not exclude possible co-operation between DAT instruments and drilling equipment manufacturers, who can choose to equip their machines with the datalogger and its sensors, created and customised by the Italian company.

"The dataloggers are being used to certify the site investigation prior to construction of diaphragm walls for the Kishanganga hydroelectric plant in India"

Q What drill rig control systems do you offer?

DAT instruments offers a specific product, designed exclusively for site investigation. The JET 4000 AME / J – MD allows, through real-time measurement and drilling parameters, recording to understand the characteristics of the ground.

Contained in a stainless-steel casing, the datalogger can work in a wide range of temperatures and uses a backlit LCD monitor, an alphanumeric keyboard and simplified symbols that help the operator's job. For maximum performance in the field, power can be supplied from a network or from battery (12V or 24V dc).

The instrument has digital/analogue inputs for the sensors and outputs for the control of the equipment, an interference filter on the inputs and sensor monitoring. The recorded data is downloaded on the computer, where software, running on Windows, allows updates through the internet.

The datalogger records the data and shows the various soil stratus. The sensors measure the main parameters, such as borehole depth, feed force, feed speed, torque, rod-rotation speed, and X and Y mast inclination. They also detect fluid pressure, flow and volume.

The software shows start- and end-date and time, and the duration of each drilling process and it calculates the soil relative energy in KJ/metre.

The datalogger can also stop the rig when the required depth is achieved and it automates the rod-rise steps of jet grouting (if performed after drilling).

During the jet grouting phase the datalogger minimises all types of human mistakes and it optimises the rig rod-rise of cement flow rate.

DAT instruments dataloggers prevent pile imperfections and/or missing parts during the injections. The entire job is then certified for project supervisors through accurate graphs.

All product components, exclusively European, receive continuous upgrades.

Q What communications devices are used?

All acquired data from the datalogger are stored in the three datalogger internal memories and can be easily transferred to a PC, installed with the company software, JET S 104 (designed and created by DAT instruments). The software manages and elaborates the data by creating graphs and tables, easily printable and transferable onto Excel sheet files.

Q What operator training programmes are in place?

Once the datalogger is installed on the drilling rig, DAT instruments technicians provide training in the field, for both the use of the hardware and software. Even if the instruments are easy to use, the technical experience offered by the Italian company allows the operator to benefit from the whole range of possibilities offered by the datalogger, in order to optimise the work. If a problem occurs, DAT instruments offers timely web assistance for real-time trouble-shooting and further consultation.

Q Can you talk about a recent project where the system helped to improve the quality of drilling or to solve problems?

The dataloggers are being used to certify the site investigation (drilling activity) prior to the construction of diaphragm walls for the Kishanganga hydroelectric plant in India.

The dataloggers were sent to India in just 48 hours, and a local DAT technician installed the entire system and is providing assistance throughout the project on-site.

The same company has also purchased two other systems to certify sound construction of diaphragm walls. These dataloggers monitor and record the depth, the X and Y inclination, deviation and rotation Z of the diaphragm wall while it is being built.

For more information: www.datinstruments.com