

METHOD AND SYSTEM FOR MEASURING THE RESISTIVITY OF SUBSOIL

ABSTRACT

The invention concerns a system for measuring the resistivity of the subsoil around a borehole, which comprises: i) a resistivity measuring device (10) comprising: -an electrode support (SU) extending over the height of the borehole and supporting a plurality of tens of electrodes (E1 to E3) brought into contact with the subsoil, - a power supply module for injecting an electric current into the subsoil via a pair of electrodes (E1 to E3), - a processing and telecommunication unit (UAT) arranged to remotely transmit measurement data resulting from measurements of electrical voltage between pairs of electrodes (E1 to E3) of the support, - a function selector (S) associated with each electrode in order to connect same either to the power supply module, or to voltage measurement means, - means for controlling the status of the function selectors which are connected to or incorporated into the processing and telecommunication unit (UAT), - a bus (B) for conveying measurement data connected to the processing and telecommunication unit (UAT), and, for each electrode, a microcontroller (IiC) comprising an analogue-digital conversion unit (AD) connected to a terminal of the function selector (S) and forming part of the voltage measurement means, and a communication and control unit (P, CS) connected to the function selector (S), to the conversion unit (AD), and to the bus (B) for conveying measurement data; the communication and control unit (P, CS) associated with each electrode being arranged to control the function selector (S) and the conversion unit (AD) and to convey voltage measurement data delivered by the conversion unit (AD) to the processing and telecommunication unit (UAT), via the bus (B) for conveying measurement data; and ii) a remote server arranged to communicate with the processing and telecommunication unit (UAT) of the resistivity measuring device (10) and to convey voltage measurement configuration data to the processing and telecommunication unit (UAT), the processing and telecommunication unit (UAT) being arranged to modify the acquisition of resistivity measurements on the basis of voltage measurements that have already been carried out, and on the basis of the voltage measurement configuration data.

[Figure 1]