MPT-EIT2000 Series

Electrical Impedance Tomography System

Fully Autonomous Resistivity and IP Monitoring System.

The EIT2000 Series system is designed for long-term monitoring of subsurface processes. The system is able to make three-dimensional subsurface images using electrical resistivity tomography (ERT) or electrical impedance tomography (EIT). ERT/EIT is a proven technology for monitoring fluid infiltration and enhanced remediation technologies such as air sparging and steam-enhanced remediation.

The EIT2000 Series is designed specifically for long term monitoring applications. The system is unique in that it can be controlled and configured remotely over a phone line or other serial communication link or can be configured to collect data sets autonomously at specified times.

MPT Transceiver

Designed for use in high noise industrial environments, measurement windows are chosen to provide optimal rejection of power line noise, and a high-order, polynomial, stacking algorithm is used to remove telluric and electrode potential noise. Signals resolution is 6 decimal places on five ranges from 0.1 V, 1 V, 10 V, 100V and 400 V using fully isolated receivers.

MPT Multiplexer

The transmitter provides precise time-domain induced-polarization (IP) or resistivity waveforms at frequencies from 1/8 Hz to 30 Hz. It can switch up to 500 volts DC and 5 amperes of electric current.

The multiplexer allows any four-electrode pattern of transmitters and receivers. Each multiplexer allows the transmitter and receiver to connect to 60 electrodes. Multiplexers can be chained permitting connection to hundreds of electrodes at once. Commonly, an entire survey site is wired at once, reducing complexity and operator involvement.

The entire system is run from a single, standard 120 Volt 60 Hz power source. The operating software uses an intuitive, user-friendly, window environment to configure and control the system. All system features can be configured and operated remotely. Alternatively, the system can be configured to collect a series of planes autonomously. The data can then be stored and retrieved later by the user via the modem.

Specifications:

Input Gain Ranging	*Automatic; 0.1 V, 1 V, 10 V, 100 V, 400V*
Maximum Output Current	*5 Amps*
Maximum Output Voltage	*500 Volts (1000 V peak to peak)*
Maximum Output Power	*2500 Watts*
Power Supply	*1500 V Isolation permits use of 110V or 24V External Power Supply.*
Input Impedance	*10 M-Ohm*
Electrodes	*Simple Metal Electrodes*
Input (Receiver) Voltage Range	*+/- 400 V, 1000 V Common Mode*
Optical Receiver Isolation	*No Ground Required*
Current Monitor	*Constant Voltage System for Improved Accuracy*
Analogue to Digital Conversion	*24 Bit Rated A to D.*
Measurement Precision	*0.5% Typical*
IP Measurement	*User Selectable to 32 Equal Size Windows*
Power-Line Rejection	*60 Hz*
SP Compensation	*Proprietary High-Order Polynomial*
Waveform	*Square: On+, Off, On-, Off*
Operation Frequency	*Programmable From 1/8 Hz to 30 Hz; 8 Hz Typical*
Signal Processing	*Continuous Stacking Over Integration Window*
Stacking	*Maximum Stacks 132 equivalent*
Noise Reporting	*As Standard Deviation*
Noise Rejection	*Proprietary Rejection of Electrode Noise*
Calibration	*Internal Standard Resistors; User-Selectable Intervals*
Operating System	*Runs on Any Windows Compatible Computer*
Memory & Data Storage	*On Laptop Computer: Virtually Unlimited*
Data Transmission	*RS-232C at 57,600 Baud*
User Controls	*Laptop Computer Software Interface*
Receiver Weight	*4-6 kg (9-14 lb.) Depending on Configuration*
Multiplexer Weight	*4-23 kg (9-50 lb) Depending on Configuration*
Dimensions	*40 cm X 52 cm X 20 cm*

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