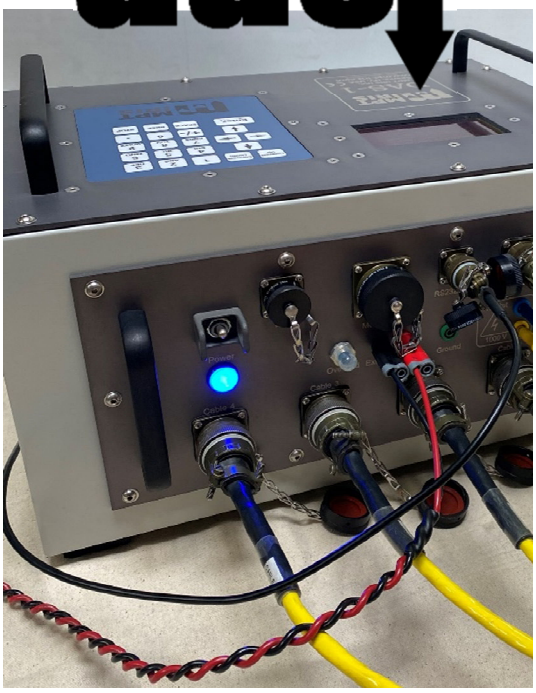
High-Quality Innovative ERT/IP Hardware and Software Solutions

das-1



ERT/IP system for long-term remote monitoring and high electrode counts

The DAS-1 is a fully autonomous, multi-channel, Electrical Resistivity Tomography (ERT) and Induced Polarization (IP) system that shines in long-term monitoring applications. It has 8 independent data acquisition channels (24 Bit ADC each) and contains an independent, high-isolation multiplexer, capable of switching 64 inputs making accurate four-point measurements according to a customizable schedule.

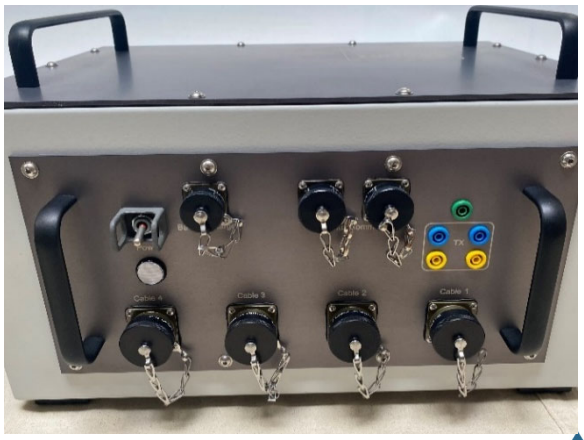
All data modes and system functions can be operated locally, or remotely under PC control. The time-domain ERT/IP data collection mode measures at base frequencies of 1/64 Hz to 13.5 Hz with up to 35 user assignable windows. The DAS-1 can also collect frequency-domain ERT/IP data at base frequencies of 1/64 Hz to 5 Hz acquiring phase and amplitude. It can collect Spectral IP data at 17 pre-assigned frequencies. As a fourth mode, it can make Self-Potential (SP) measurements at one or more receiver pairs with the transmitter being shut off (software control).

The robust, reliable, and world-wide established DAS-1 collects surface to surface, surface to borehole, and borehole to borehole data for 2D, 3D, or 4D applications. It is well suited for environmental, mining, hydrological, geological, natural hazards, and dams and levees applications with high electrode counts. It can also be used for marine ERT/IP data acquisition together with a dedicated marine transmitter.

The DAS-1 can be expanded in multiples of 64 electrodes, using a high-isolation multiplexer (MUX-1 shown on the right below), making high electrode count possible for large-scale 3D surveys. Up to 255 MUX-1 or 16,384 electrodes can be used.

Other Features

- Data stream
  - Records up to 128 data values either synchronously or asynchronously with the transmitter
  - The data are stored in ASCII format on microSD cards in standard FAT32 format allowing easy storage and transfer of up to 8 gigabytes of data.



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  - Apply your own data averaging and noise rejection methods afterwards
- Weather resistant anodized 5052 aluminum case
- Operates from single touch keypad, no moving parts
  - Uses telephone-style text input
  - 40 x 16 character LCD display
- Internal transmitter
  - Auto voltage range, auto current limit
  - Short circuit and open connection detection
  - 250 Watts, 2.5 Amps maximum, 950 V peak to peak maximum
  - 12 V 30 Amp input
  - High Efficiency up to 92%

The DAS-1 system easily interfaces with the ERTLab Studio, our 2D, 3D, and 4D ERT data modeling, processing, inversion, and management software. It also allows 3D topographical modeling, creation of 2D and 3D arrays/schedules of ERT measurements, and a powerful graphical 3D environment for displaying resistivity and IP models.

Specifications

Input Gain Ranging	Automatic; 0.08, 0.4, 2, 10 V
Maximum Output Current	2.5 Amps
Maximum Output Voltage	475 Volts 950 V peak to peak
Maximum Output Power	250 Watts
Power Supply	12 V
Input Impedance	~10^9 Ohm
Electrodes	Simple Metal Electrodes
Input (Receiver) Voltage Range	+/- 10 V, 1000 V Common Mode
Analogue to Digital Conversion	24 Bit A to D converters per channel
Measurement Precision	0.05% Typical
IP Measurement	User Selectable 35 Custom Windows
Power-Line Rejection	60 Hz / 50 Hz
SP Compensation	Proprietary High-Order Polynomial
Waveform	Square: On+, Off, On-, Off (Time Domain) or On+, On- (Frequency Domain)
Operation Frequency	Programmable From 1/64 Hz to 13.5 Hz
Signal Processing	Continuous Stacking Over Integration Window
Stacking	Maximum Stacks 256
Noise Reporting	As Standard Deviation
Noise Rejection	Proprietary Rejection of Electrode Noise
Multi-Channel	8 Independent Receiver Channels
Memory & Data Storage	MicroSD Card
Data Transmission	RS-232C or USB or Direct Read of MicroSD Card
User Controls	Laptop Computer Software Interface
Receiver Weight	Approximately 19 kg (Multiplexer = 12 kg)
Dimensions	47 cm X 36 cm X 31 cm

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