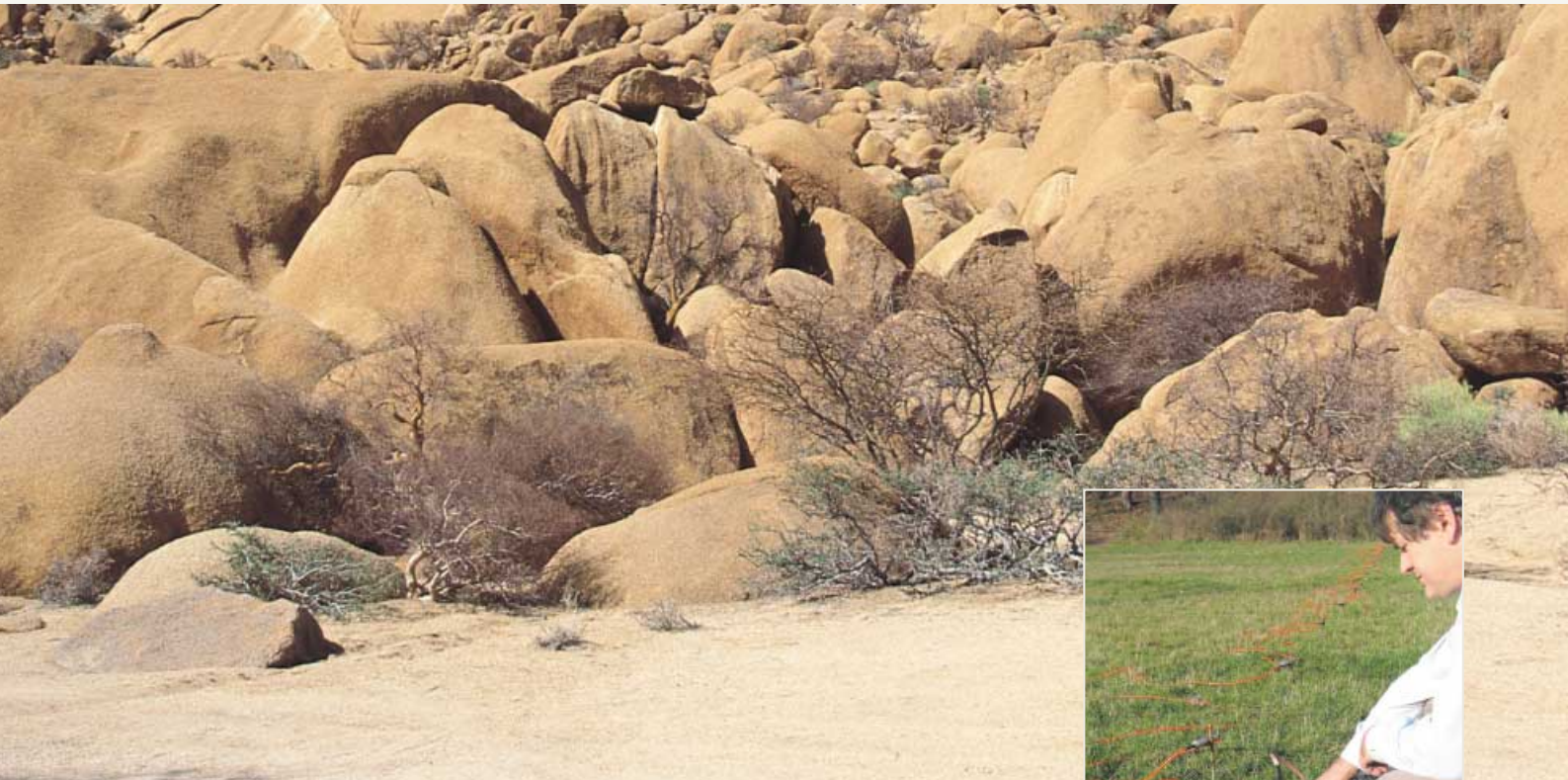


ARES

AUTOMATIC RESISTIVITY SYSTEM



1100 V_{p-p} - 2 A - 300 W Transmitter

**2D/3D Resistivity & IP Tomography
VES, RP, SP Measurements
up to 10 Adjustable IP Windows**

Easy-Control System

**Active Multi-Electrode Cables
Passive Cables with Switch Box
Roll-Along Possibility**

Applications:

groundwater explorations, geotechnical investigations, monitoring of dams and dikes, environmental studies, pollution plumes mapping, geological surveys, mineral prospecting, archaeology, detecting of cavities, underwater, marine, borehole and cross-hole measurements.

ARES represents a well equipped resistivity and IP imaging system.

Its variability, easy field operation (without PC), feeding from a standard 12 V battery, rich support of standard and special electrode arrays and compatibility with widespread interpretation software makes ARES a cost effective and useful tool for working groups and research teams.



ARES - Technical Specifications

One ruggedized weatherproof unit integrates a powerful transmitter with a sensitive receiver and a control unit completed with rich software support for a variety of measuring methods.

Transmitter

Power	up to 300 W
Current	up to 2.0 A
Current resolution	24 bits
Voltage	1100 V _{p-p} (actually applied voltage automatically optimizes level of measured potential)
Protection	full electronic protection

Receiver

Input voltage range	±5 V _{p-p} (±10 V _{p-p} optionally)
Voltage resolution	24 bits
Input impedance	20 MΩ
Mains frequency filtering	50 or 60 Hz selectable notch filter

Measuring methods

2D/3D Multi-Electrode Resistivity and IP Tomography
VES – Vertical Electrical Sounding (resistivity and IP)
RP – Resistivity and IP Profiling
SP – Self Potential

Supported arrays

Wenner Alpha / Beta / Gamma, Wenner-Schlumberger, Dipole-Dipole, Pole-Dipole, Reverse Pole-Dipole, Pole-Pole, MGM, Equatorial Dipole-Dipole, Cross-Hole, Borehole-Surface, user defined configurations

Measurement - features

	Self-adapting control system
	Automatic ranging and calibration
	Automatic pulse cycling and checking of measured values
	Easy interruption of the measurement
	Capability of profile prolongation by means of multi-electrode cable rolling
Total accuracy	Better than 1% (typically)
IP - Induced Polarization (Chargeability)	Up to 10 adjustable IP-windows, each max. 30 s, step 20 / 16.66 ms
Pulse	0.3 s – 30 s, step 0.1 s
SP compensation	Constant and linearly varying SP cancellation
Stacking	Manual or automatic (with self-adaptive setting)
	Adjustable optimum measured voltage and maximum acceptable measurement error
Stored values	Position of the measured point, output current, input voltage, SP, apparent resistivity, standard deviation, chargeability with standard deviation for up to 10 IP windows
Number of electrodes	max. 200 in one array
Line length for ME cable	max. 10 km

Control unit

	Easy-Control system, no need of PC for the measurement
	Alphanumeric keyboard, large LCD display
	Measuring system can be upgraded via internet
	Safety switch
Memory	16 Mbit, up to 100 files, 70000 readings
PC Interface	RS232 and USB
PC software	provides data download and export for processing programs (RES2DINV / RES3DINV, Surfer, IPI2WIN and others) as well as upload of measuring procedures
Power supply	12 V car battery or 12 V attachable battery pack, AC/DC adapter for office
Connectors	for PC, battery and a universal one for all measuring accessories (Multi-Electrode Cable, VES-Adapter, Switch box), measuring current and potential clamps
Dimensions	15 x 21 x 40 cm
Weight	4.5 kg
Ambient conditions	-10°C to +50°C, weatherproof

Standard Accessories:

- Transport case
- T-piece (for connection of multi-electrode cable sections and cables for current and potential electrodes)
- Cable for external 12 V battery
- AC/DC adapter (for all countries)
- RS232 and USB cables
- PC software ARES (MS Windows based)
- User manual

Optional accessories:

- Multi-electrode cable sections - active and passive
- Switch box (attachable 48-channel adapter) for passive multi-electrode cables
- 12 V attachable battery pack with fast 3-stage battery charger
- VES-adapter (for 5 pairs of potential electrodes)
- Cable reels
- Stainless steel electrodes, non-polarizable electrodes
- Processing software for 2D/3D inversion, mapping and VES interpretation



Active Multi-Electrode Cable



Passive Multi-Electrode Cable



Battery Pack



Switch Box (48 channels) for Passive Multi-Electrode Cable



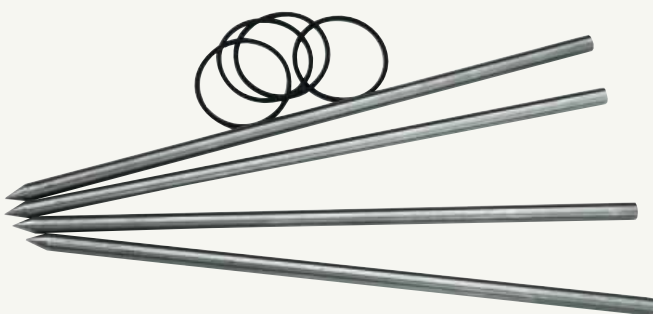
VES Adapter



Current Cable Reel



Potential Cable Reel



Stainless Steel Electrodes



Non-Polarizable Electrode

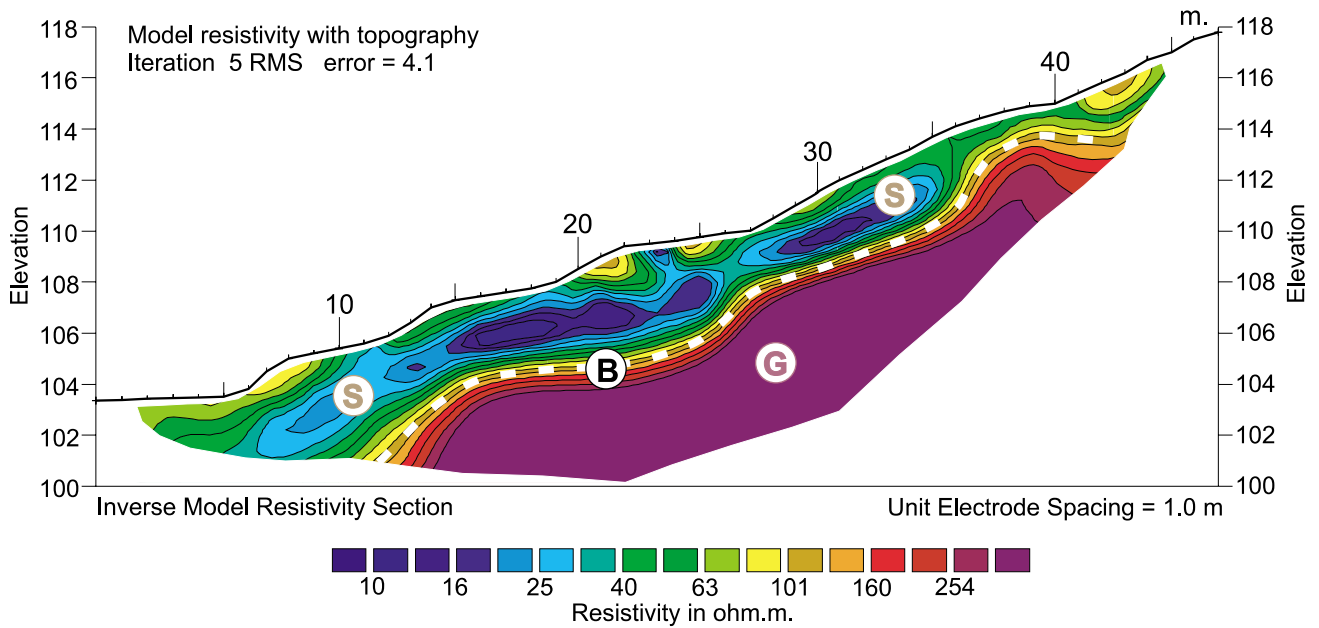
Monitoring of rock surface for judgement of slope deformation and landslide risk

Measurement before the new building construction. Wenner-Schlumberger array used.

(B) Bedrock surface

(S) Silty loam+Eluvium

(G) Biotite granodiorite



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