

ARES II ADVANCED MULTI - CHANNEL AUTOMATIC RESISTIVITY & IP SYSTEM



**850 W - 2000 V_{p-p} - 5 A Transmitter
with Parallel Power Booster Capability
for all Multi-Electrode and Manual Modes
10-channel Receiver
with up to 20 Adjustable IP Windows**

**2D/3D Resistivity & IP Tomography
VES, RP, SP Measurements
Continuous or Timed Survey
Remote Control Option**

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

**Easy Operation with Graphical Screen
Data Download via USB Port or Flash Disk
Supply from 12 V Battery or AC/DC Converter
GPS Connectivity**



Applications:

groundwater exploration, geotechnical investigation, monitoring of dams and dikes, environmental studies, geological survey, mineral prospecting, archaeology, detecting of cavities and buried objects, underwater, marine, borehole and cross-hole measurements.

ARES II Advanced resistivity & IP imaging system equipped with 10 channel receiver convenient for all kinds of geophysical survey. ARES II keeps compatibility with all ARES multi-electrode accessories.

One ruggedized weatherproof unit integrates transmitter with receiver and control unit completed with rich software support for many measuring methods.

ARES II - Technical Specifications

Transmitter

Power up to 850 W
Current up to 5 A (24 bit resolution)
Voltage 2000 V_{p-p} (actually applied voltage automatically optimizes level of measured potential)
full electronic protection, energy efficiency up to 91%, passive cooling without ventilation holes

Receiver

Number of channels 10
Input voltage range ± 20 V_{p-p} (24 bit resolution), different range optionally
Input impedance 20 M Ω
Mains frequency filtering 50 or 60 Hz selectable notch filter (140 dB suppression)

Measuring methods

2D/3D/4D Multi-Electrode Resistivity and IP Tomography
VES – Vertical Electrical Sounding (resistivity and IP)
RP – Resistivity and IP Profiling
SP – Self Potential
cross-hole tomography
moving applications with GPS

Supported arrays

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

Measurement - features

checking of grounding
automatic calibration
automatic pulse cycling and checking of measured values
easy interruption and continuation of measurement
capability of profile prolongation by means of multi-electrode cable roll-along procedure
better than 1% (typically)

Total accuracy

IP - Induced Polarization (Chargeability)

up to 20 adjustable IP-windows, each max. 30 s, step 20 / 16.66 ms

Pulse

0.2 s – 30 s, step 0.1 s

SP compensation

constant and linearly varying SP cancellation

Stacking

manual or automatic (with self-adaptive setting)

Stored values

adjustable optimum measured voltage and maximum acceptable measurement error
position of the measured point, output current and voltage, input potential, SP, apparent resistivity, standard deviation, chargeability with standard deviation for up to 20 IP windows

Number of electrodes

max. 65000 in one array

Control unit

easy-control system with alphanumeric keyboard and graphic 4.7" high resolution LCD display
easy real time horizontal and vertical data consistency checking and data remeasuring
real time decay curve on display
measuring system can be upgraded via internet
safety switch

Memory

256 MB, 100 files, more than 5 mil. readings

PC Interface

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, 12 V electronic power supply, AC/DC adapter for office

Connectors

current and potential sockets, data download (USB and flash disk), GPS, battery
and a universal one for all measuring accessories

Dimensions

15 x 21 x 40 cm

Weight

5.9 kg

Ambient conditions

-10°C to +60°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 (protective)
- VES & profiling adapter II
- AC/DC adapter (for all countries)
- USB cable
- PC software ARES (MS Windows based)
- User manual

Optional accessories:

- Multi-electrode cable II sections
- Switch box II (48-line adapter) for passive multi-electrode cables
- T-piece for single channel accessories
- 12 V attachable battery pack with fast 3-stage battery charger
- 12 V electronic power supply
- Cable reels
- Stainless steel electrodes, non-polarizable electrodes
- Processing software for 2D/3D inversion, mapping and VES interpretation
- RS232, Radio, GSM remote control sets

ARES II Accessories



ARES II Remote Control



VES & Profiling Adapter II



1-channel Multi-Electrode Cable II (cable section, switch box) MCS5/R



10-channel Switch Box II for Passive Multi-Electrode Cable (48 lines)



5-channel Multielectrode Cable II (cable section, switch box) ME II/5-5



10-channel Multi-Electrode Cable II (cable section, switch box, reel) ME II/10-5

Recommended measuring sets for resistivity & IP tomography

These configured sets are offered at discounted prices.

Advanced active cable set with 48 electrodes - RES4-AACTIVE

ARES II/1 + 6 pcs of MCS5/R active cables (each with 8 outlets at 5 m spacing, 2 plastic transport boxes, each with 3 cables)



6 pcs



2 pcs

Schematic configuration

Possible expansion



Advanced single channel lightweight system for 2D, 3D, 4D survey with optimized current and potential lines and easy roll-along possibility. ARES II/1 main unit offers comfortable enhanced operation with graphic screen as well as possibility of upgrade to 10-channel system.

5-channel advanced active cable set with 72 electrodes - RES5-5CH

ARES II/10 + 9 pcs of ME II/5-5 active cables (each with 8 outlets at 5 m spacing and section switch box, 3 plastic transport boxes, each with 3 cables)



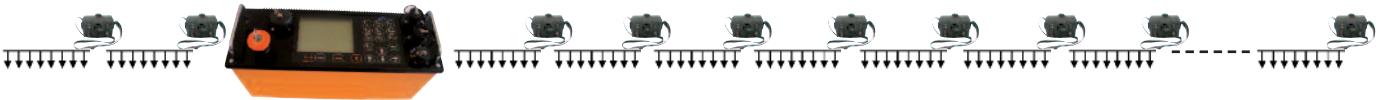
9 pcs



3 pcs

Schematic configuration

Possible expansion



5-channel lightweight system for 2D, 3D, 4D survey on longer profiles and for advanced IP measurement equipped with optimized current and potential lines and easy roll-along possibility.

This set can be completed with next cable sections up to several hundreds of outlets in one cable line.

10-channel advanced active cable set with 120 electrodes - RES6-10CH

ARES II/10 + 10 pcs of ME II/10-5 active cables (each with 12 outlets at 5 m spacing and section switch box on the reel)



10 pcs

Schematic configuration

Possible expansion

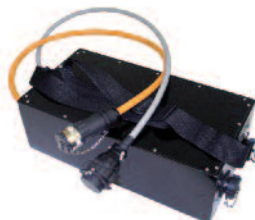


Top performance 10-channel system for fast 2D, 3D, 4D survey on longer profiles and for advanced IP measurement equipped with optimized current and potential lines and easy roll-along possibility.

This set can be completed with next cable sections up to several hundreds of outlets in one cable line.

Water set - RES8-WATER

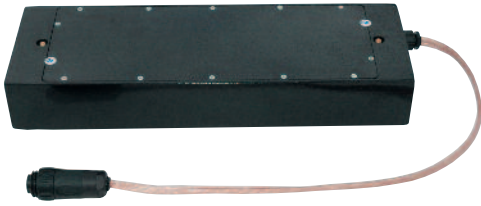
ARES II/10 + Switch box II (10 channels, 48 lines)



Example of special water cable on the reel (24 outlets at 2 m spacing, one end sealed, 10 m lead-in part, on the reel).

This set (completed with special water cables - not included in the set price) serves both for water level continuous measurement with GPS positioning and for borehole investigations (borehole-borehole, borehole-surface).

General Accessories



Battery Pack



Current Cable Reel



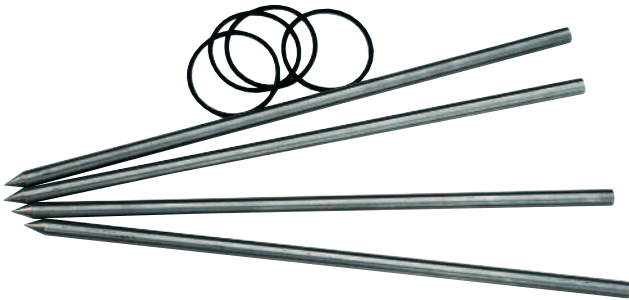
Potential Cable Reel



12 V Electronic Power Supply



Non-Polarizable Electrode

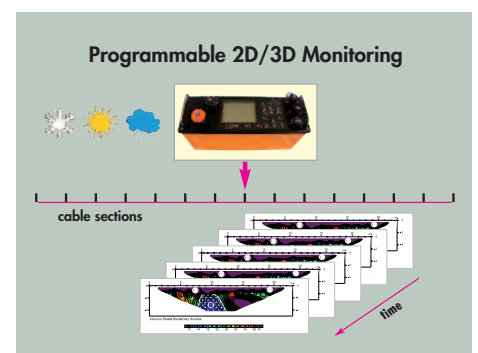
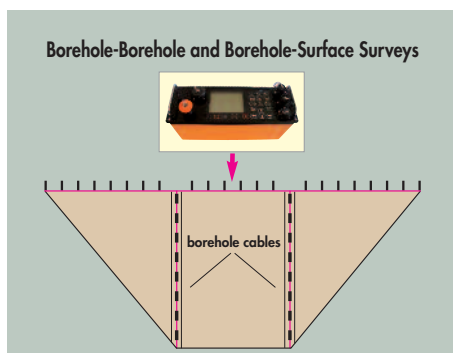
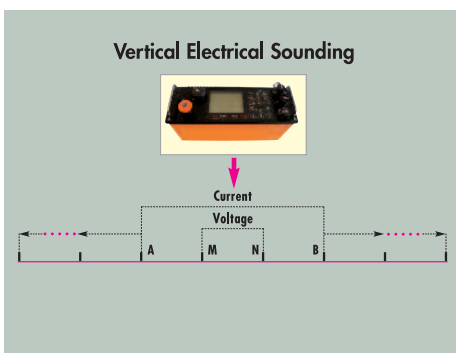
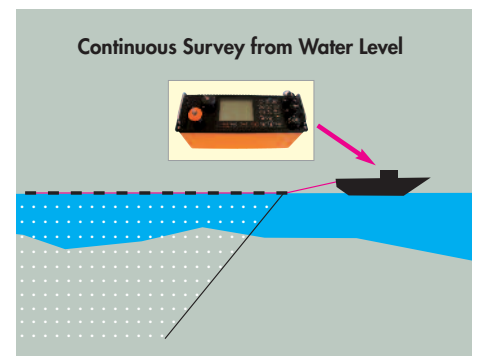
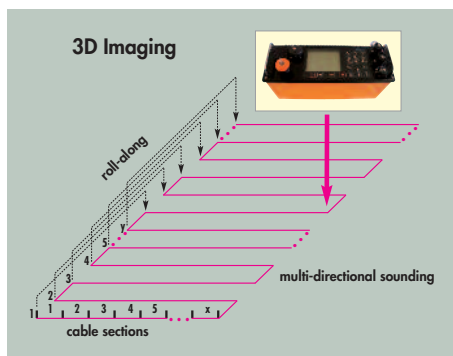
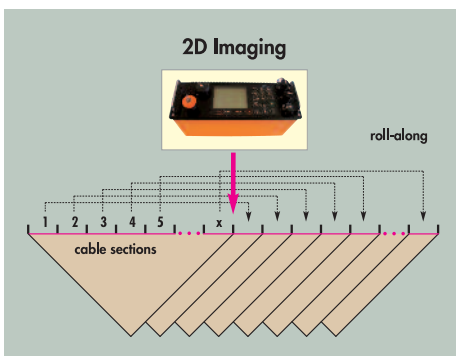


Stainless Steel Electrodes



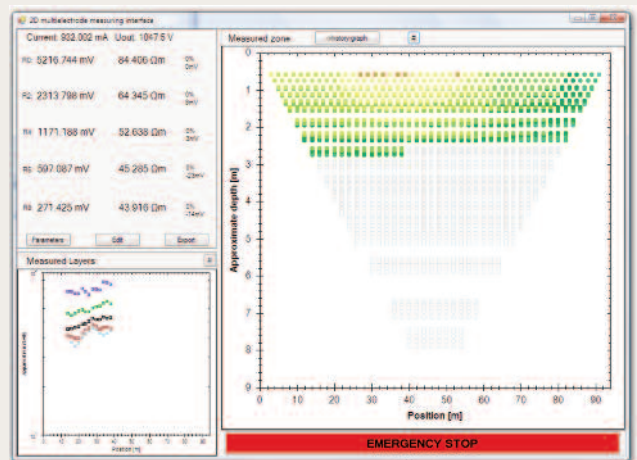
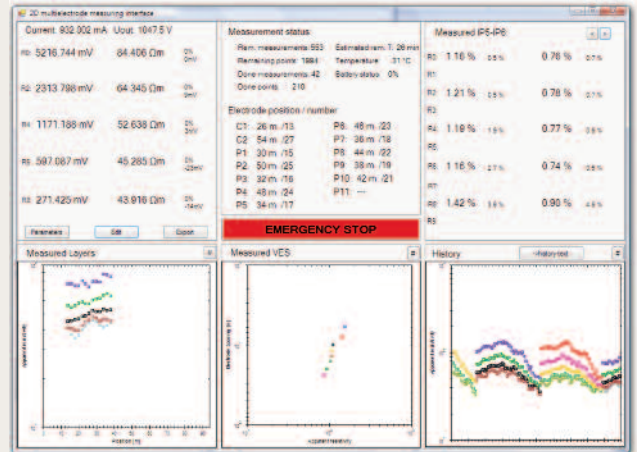
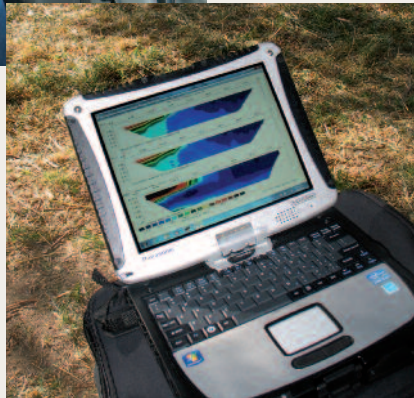
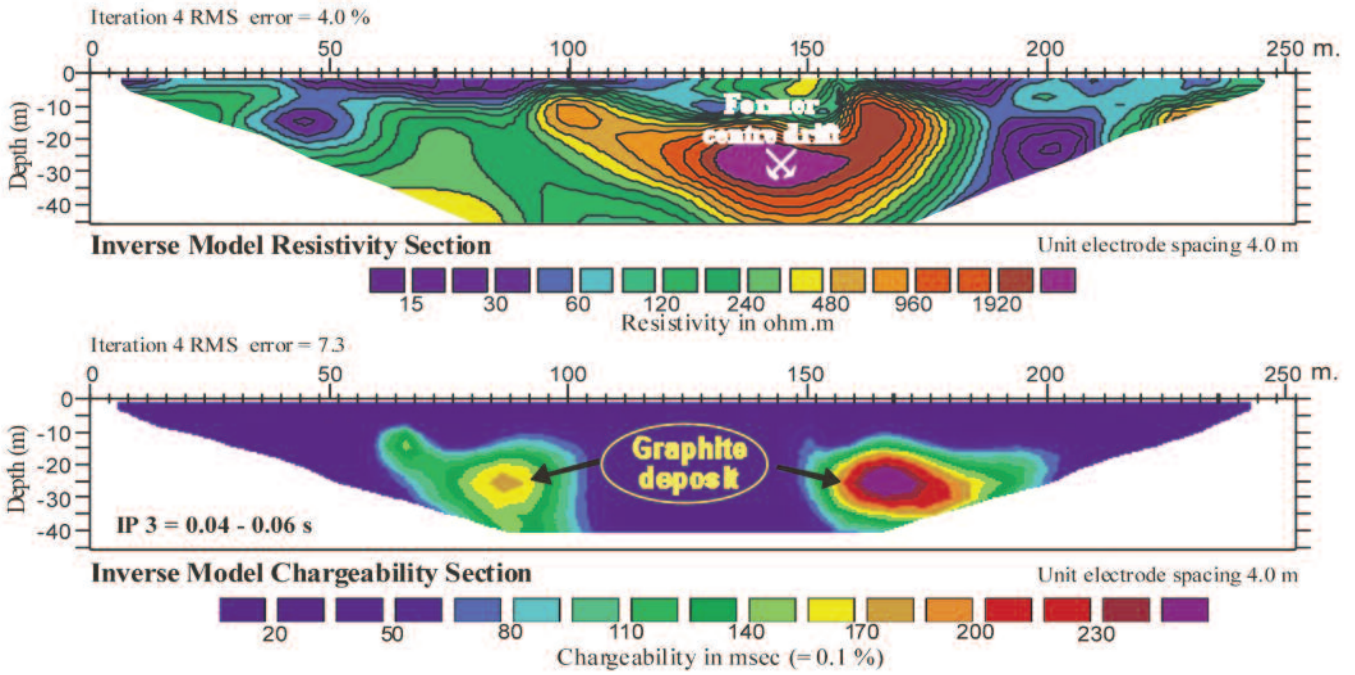
ARES II Set in Transport Case

Supported Ways of Measurement



Natural Graphite Deposit

IP Section performed above former drift of graphite mine shows position of deposit. Position of the drift as well as rather complicated geological structure are seen from accompanying resistivity section.



Purkyňova 144, 612 00 Brno, Czech Republic
 Tel.: +420 549 522 919, 916
 Fax: +420 549 522 915
 E-mail: info@gfinstruments.cz
 www.gfinstruments.cz