

ARES

AUTOMATIC RESISTIVITY & IP SYSTEM



**850 W - 2000 V_{p-p} - 5 A Transmitter
for all Multi-Electrode and Manual Modes
Up to 10 Adjustable IP Windows**

**2D/3D Resistivity & IP Tomography
VES, RP, SP Measurements**

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

**Easy Operation
Data Download via RS232 or USB Port
Supply from 12 V Battery or AC/DC Converter**



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 Traditional single channel resistivity & IP system equipped with a variety of smart and economic accessories.

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

ARES - 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

| | |
|---------------------------|--|
| Input voltage range | ± 5 V _{p-p} (24 bit resolution), ± 10 V _{p-p} optionally |
| Input impedance | 20 M Ω |
| 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
cross-hole tomography

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

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 rolling
better than 1% (typically)

| | |
|---|--|
| Total accuracy | up to 10 adjustable IP-windows, each max. 30 s, step 20 / 16.66 ms |
| IP - Induced Polarization (Chargeability) | 0.3 s – 30 s, step 0.1 s |
| Pulse | constant and linearly varying SP cancellation |
| SP compensation | manual or automatic (with self-adaptive setting) |
| Stacking | 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 |

Control unit

easy-control system
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, 12 V electronic power supply, AC/DC adapter for office |
| Connectors | for PC, battery and a universal one for all measuring accessories (Multi-Electrode Cable, VES-Adapter, Switch box), current and potential sockets |
| Dimensions | 15 x 21 x 40 cm |
| Weight | 5.9 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 (protective)
- 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-line adapter) for passive multi-electrode cables
- 12 V attachable battery pack with fast 3-stage battery charger
- 12 V electronic power supply
- 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

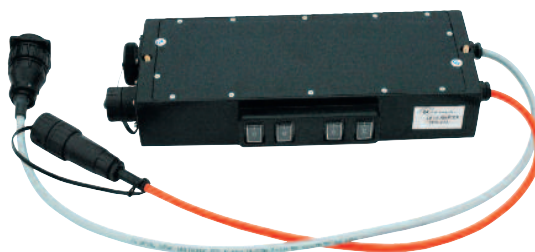
ARES Accessories



Active Multi-Electrode Cable
MCS5



Passive Multi-Electrode Cable
MCC5



Switch Box (48 lines) for Passive Multi-Electrode Cables



VES Adapter

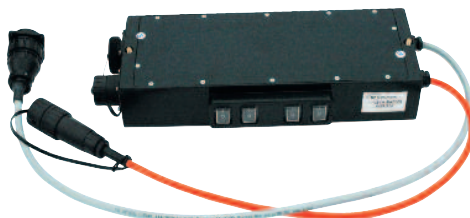
Recommended measuring sets for resistivity & IP tomography

These configured sets are offered at discounted prices.

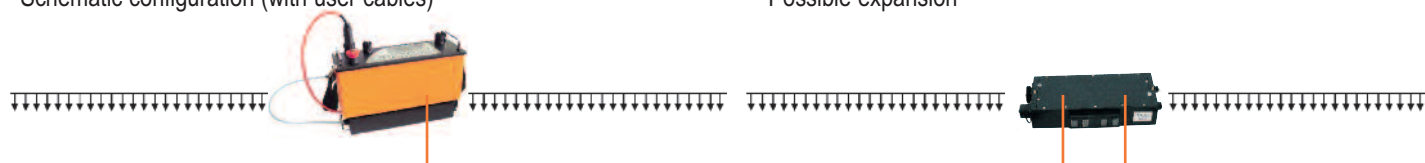
Economy set with 48-line switch box (for 48 electrodes) - RES1-ECONOMY



Schematic configuration (with user cables)



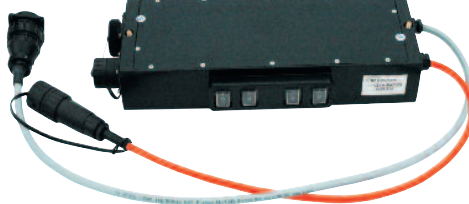
Possible expansion



Single channel system for use with own multielectrode cables (electrically compatible with ARES transmitter) allows performing basic 2D, 3D, borehole and static water level measurements.

Passive cable set with 48 electrodes - RES2-PASSIVE

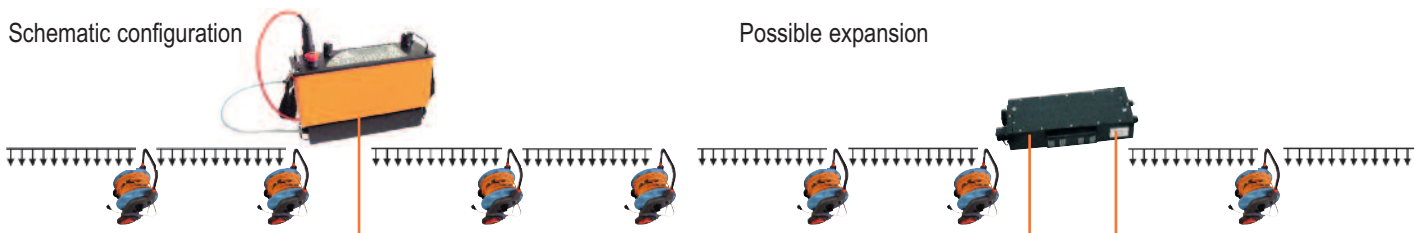
ARES + 48-line switch box + 4 pcs of MCC5 passive cables (each with 12 outlets at 5 m spacing on the reel)



4 pcs

Schematic configuration

Possible expansion



Single channel system for 2D, 3D survey (with limited roll along ability).

Active cable set with 48 electrodes - RES3-ACTIVE

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



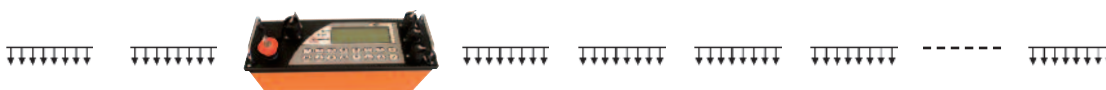
6 pcs



2 pcs

Schematic configuration

Possible expansion



Single channel lightweight system for 2D, 3D survey with optimized current and potential lines and easy roll along possibility.

VES set - RES7-VES



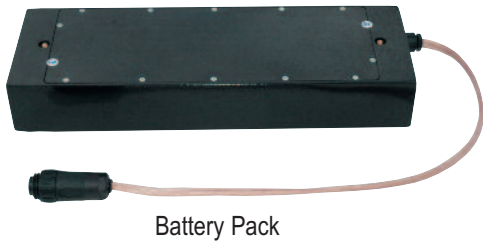
2 pcs



2 pcs

Simplest set for VES (vertical electrical sounding).

General Accessories



Battery Pack



Current Cable Reel



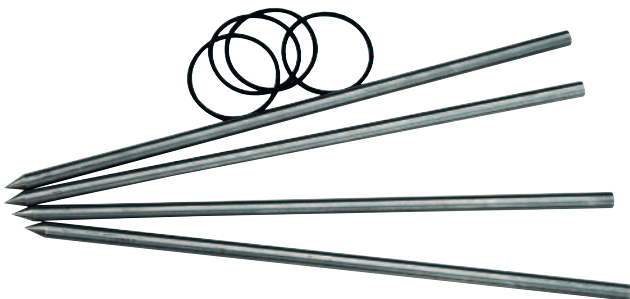
Potential Cable Reel



12 V Electronic Power Supply



Non-Polarizable Electrode



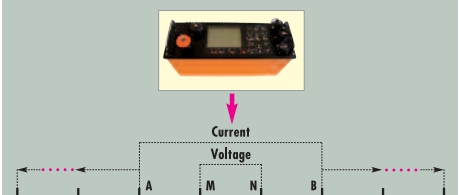
Stainless Steel Electrodes



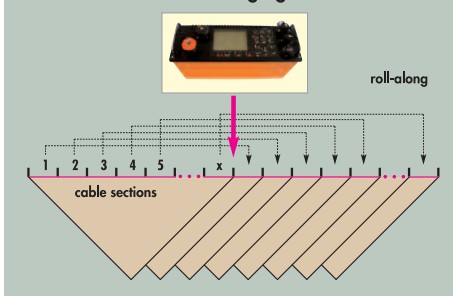
ARES Set in Transport Case

Supported Ways of Measurement

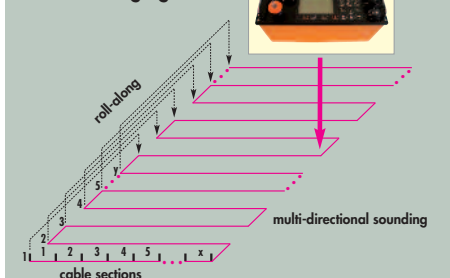
Vertical Electrical Sounding



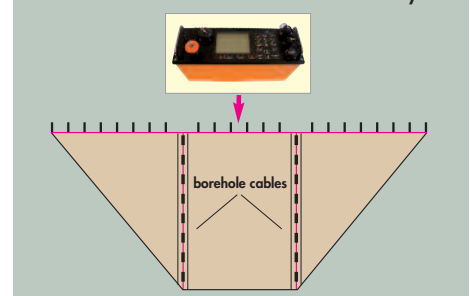
2D Imaging



3D Imaging

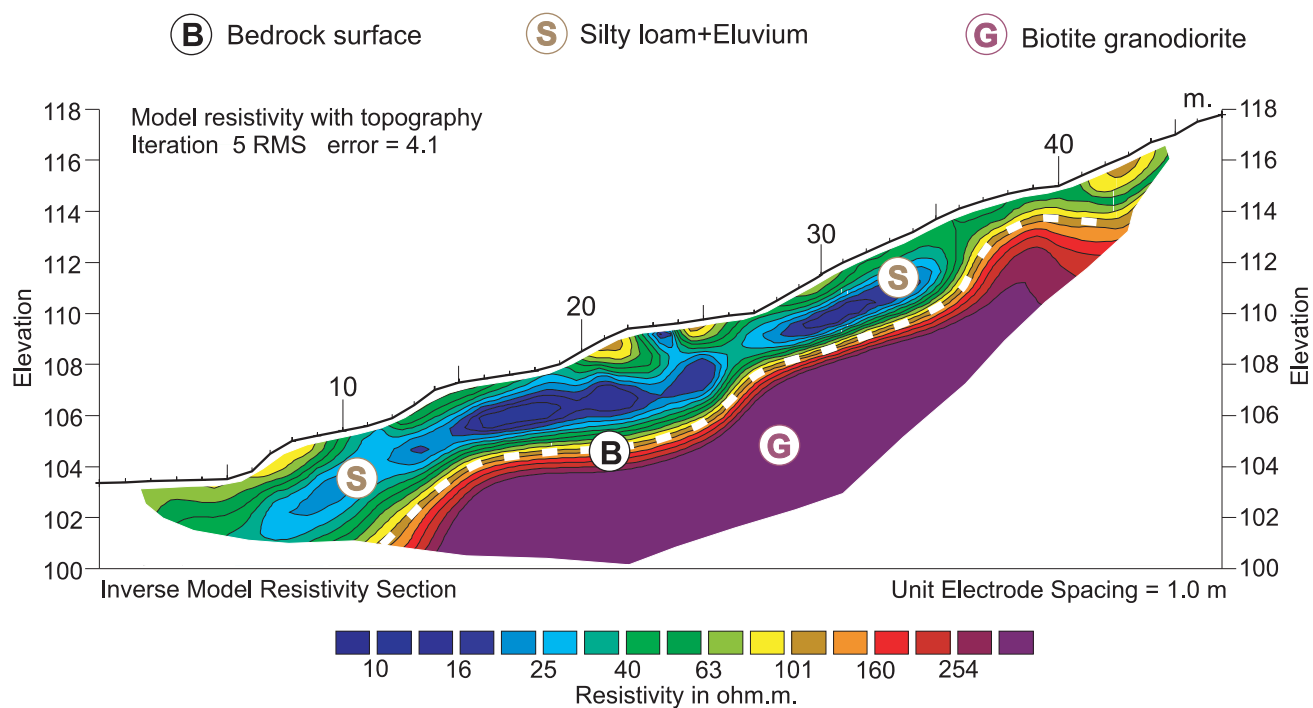


Borehole-Borehole and Borehole-Surface Surveys



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

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



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