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 Vp-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 Vp-p (24 bit resolution), ± 10 Vp-p optionally
- **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
- 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
- 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)
- Storage: adjustable optimum measured voltage and maximum acceptable measurement error
- 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, IP2WIN 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

With reservations for changes
**ARD Accessories**

**Passive Multi-Electrode Cable MCC5**

**Active Multi-Electrode Cable MCS5**

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

**VES Adapter**

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**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**

ARES + 48-line switch box + 1 pair of connectors for user cables

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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)

Schematic configuration Possible expansion

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

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**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)

Schematic configuration Possible expansion

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

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**VES set - RES7-VES**

ARES + VES cables (2 x 500 m current, 2 x 100 m potential on the reels)

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
- ARES Set in Transport Case
- Stainless Steel Electrodes

Supported Ways of Measurement

- 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.

- **B** Bedrock surface
- **S** Silty loam + Eluvium
- **G** Biotite granodiorite

Model resistivity with topography
Iteration 5 RMS error = 4.1

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