

ARES - AUTOMATIC RESISTIVITY SYSTEM

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

Resistivity & IP (up to 10 adjustable IP windows)

2D/3D Multi-Electrode Resistivity Tomography, VES, RP, SP

Easy-Control System



ARES represents a new well equipped resistivity and IP imaging system of the third generation designed by GF Instruments.

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

Applications:

groundwater explorations, geotechnical investigations, measurements on dams and dikes, environmental studies, geological surveys, mineral prospecting, archaeology and many others.

Technical Specifications

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

Transmitter

Power	up to 300 W
Current	up to 2.0 A
Voltage	10 – 550 V (1100 V _{p-p})
Protection	full electronic protection
Precision	0.1%

Receiver

Input impedance	20 MΩ
Input voltage range	±5 V
Mains frequency filtering	50 or 60 Hz
Precision	0.1%

Supported methods

2D/3D-Multi-Electrode Resistivity Tomography	Wenner Alpha / Beta / Gamma, Wenner-Schlumberger, Dipole-Dipole, Pole-Dipole, Reverse Pole-Dipole, Pole-Pole, MSG, user defined configurations possibility of simultaneous measurement of up to 8 methods
VES – Vertical Electrical Sounding	Schlumberger, Wenner, dipole-dipole, pole-dipole, pole-pole, user defined configurations
RP – Resistivity Profiling	Wenner Alpha / Beta / Gamma, Wenner-Schlumberger, Dipole-Dipole, Pole-Dipole, Pole-Pole, MSG
SP - Self Potential	

Measurement – features

	self-adapting control system, automatic ranging and calibration automatic checking of measured values easy interruption of the measurement (for the first view of measured structures) capability of profile prolongation by means of multi-electrode cable rolling
IP - Induced Polarization (Chargeability)	available for all 1D / 2D / 3D methods up to 10 adjustable IP-windows, each max. 30s, step 20 / 16.66ms
Pulse	0.3 s – 30 s, step 0.1 s
SP compensation	constant and linear, time-invariant
Stacking	manual or automatic self-adaptive setting
Measurement optimization	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 all 10 IP windows
Output data format	RES2DINV / RES3DINV, Surfer (and others)

Maximum number of electrodes	200 for 2D, 1000 for 3D arrays
Maximum profile length	10 km
Control unit	Easy-Control system, no need of PC for the measurement alphanumeric keyboard, large LCD display safety switch
Memory	16Mbit, up to 100 files, 70000 readings
Interface	RS232 or USB
Power supply	12 V car battery or attachable battery pack
Connectors	for PC, battery and a universal one for all measuring accessories (Multi-Electrode Cable, VES-Adapter ...) or
Dimensions	13 x 17 x 39 cm
Weight	3.5 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 12V battery
- RS232 and USB cables
- AC adapter (for all countries)
- Measuring software ARES

Optional accessories:

- 12 V battery pack with fast 3-stage battery charger
- Multi-Electrode cable sections with intelligent electrodes for 2D/3D resistivity tomography
- Multi-Conductor cable sections with outlets for 2D/3D resistivity tomography (with adapter for their connection)
- VES-Adapter (for 5 pairs of potential electrodes)
- Cable reels
- Standard electrodes, non-polarisable electrodes
- Interpretation and mapping software

