

BROADBAND CURRENT SOURCE



AT-100

DESCRIPTION:

AT-100 is lightweight, compact and portable broadband geophysical current source with wide range of the output frequencies and currents, allowing large variations of the load impedances

CURRENT SOURCE APPLICATIONS:

- Near-Surface & Mid-Range Investigations
- Mining, kimberlites (diamonds) and groundwater exploration
- Geological, landslide, faults, melt rock, aquifer and karst mapping
- Geological engineering, pipeline condition analysis, land reclamation, environmental studies
- Geodynamic, archaeological, dike and sills, ecological investigations
- Geological, volcano and earthquake monitoring
- Permafrost & glacier research

MAIN FEATURES:

- **ALL-IN-ONE SYSTEM** - Time and Frequency Domain ground EM data acquisition
- **STAND-ALONE SYSTEM** - no external devices (PC, tablets, etc.) needed to carry out field DAQ
- Field Survey Capabilities: **EP, VES, DES, Electrotomography, Misse-a-la-masse, TDIP, FDIP (Amplitude & Phase), SIP, CSAMT, CSMT, VLF, FDEMS, IEP, TDEM**
- Stabilized output current up to 1A for driving inductive loads or grounded dipoles
- Broadband output - 50kHz to 0.01Hz
- Intuitive Hi-Res color touchscreen GUI
- Real-time parameters monitoring and notifications
- GPS and cable synchronization options
- Manual and Automatic operation modes
- Powered by 12V external battery
- Portable, lightweight

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TECHNICAL SPECIFICATIONS:

HARDWARE:

SUPPORTED METHODS:	EP, VES, DES, Electrotomography, Misse-a-la-masse, TDIP, FDIP (Amplitude & Phase), SIP, CSAMT, CSMT, VLF, FDEMS, IEP, TDEM
MAXIMUM POWER OUTPUT:	100W
MAXIMUM OUTPUT VOLTAGE	400V
MAXIMUM OUTPUT CURRENT:	1A
EFFECTIVE FREQUENCY BAND:	50,000 - 0.01 Hz
OUTPUT SIGNAL WAVEFORM:	Square wave
DUTY CYCLE:	50% / 25%
EFFICIENCY:	80%
CURRENT STABILIZATION:	± 0.5% (not worse)
SYNCHRONIZATION:	GPS / Crystal / Cable
ACCURACY OF SYNCHRONIZATION:	± 1 x 10 ⁻⁶
SAFETY FEATURES:	Short circuit, open circuit, line breakage, emergency stop
DISPLAY:	800 x 480 sunlight-readable, color
USER INTERFACE:	Intuitive GUI / touchscreen
OPERATION MODES:	Manual / Automatic / Programmed Schedule
POWER SUPPLY:	12V External battery
OPERATING TEMPERATURE RANGE:	-40 to +70C
CASE:	Dust-moisture protective / all-season
DIMENSIONS:	43 x 17 x 17 cm
WEIGHT:	5.5 kg

OUTPUT FREQUENCIES (Hz):

BAND 1:	43690.7, 21845.3, 10922.7, 5461.33, 2730.67, 1365.33, 682.667, 341.333, 170.667, 85.3333, 42.6667, 21.3333, 10.6667, 5.33333, 2.66667, 1.33333, 0.66667, 0.33333, 0.16667, 0.08333, 0.04167, 0.02083, 0.01042
BAND 2:	40000, 20000, 10000, 5000, 2500, 1250, 625, 312.5, 156.25, 78.125, 39.063, 19.531, 9.7656, 4.8828, 2.4414, 1.2207, 0.6104, 0.3052, 0.1526, 0.0763, 0.0381, 0.0191
BAND 3:	32768, 16384, 8192, 4096, 2048, 1024, 512, 256, 128, 64, 32, 16, 8, 4, 2, 1, 0.5, 0.25, 0.125, 0.0625, 0.03125, 0.01563
BAND 4:	54591.5, 27295.7, 13647.9, 6823.94, 3411.97, 1705.98, 852.992, 426.496, 213.248, 106.624, 53.312, 26.656, 13.328, 6.664, 3.332, 1.666, 0.833, 0.4165, 0.20825, 0.10413, 0.05206, 0.02603, 0.01303
BAND 5:	49152, 24576, 12288, 6144, 3072, 1536, 768, 384, 192, 96, 48, 24, 12, 6, 3, 1.5, 0.75, 0.375, 0.1875, 0.09375, 0.04688, 0.02344, 0.01172

