



COST EFFICIENT SOUNDING OF CONDUCTIVE STRUCTURES

WalkTEM™ is a transient electromagnetic (TEM or time domain electromagnetic TDEM) system designed for surveys in the geologic near-surface. Applications include groundwater and salinity studies, civil engineering, mineral exploration, geotechnical and environmental investigations.

WalkTEM is a stand-alone system when connected to an external transmitter loop and a receiver coil.

The system is designed for demanding field work under rough field conditions.

The basic instrument comprises a high current transmitter, a dual (or optionally a three or four) channel high dynamic and wide bandwidth receiver as well as an integrated field PC.

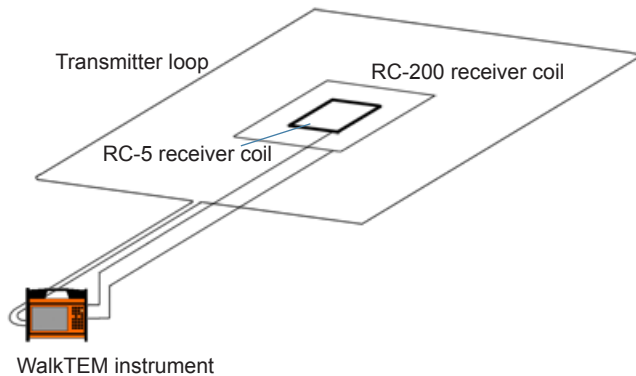
Power is supplied from internal rechargeable batteries. Use of external power enhances transmitter performance.

The unique acquisition technology allows WalkTEM to accurately resolve subtle changes in geology in fine detail with excellent depth penetration.

The integrated PC allows for evaluation and processing on-site where the high resolution color and sunlight-viewable monitor makes operation smooth and intuitive.

Two models of low noise active air-cored receiver coils are available. With its higher bandwidth RC-5 is advantageous for high resolution shallow soundings. RC-200 benefits from a larger effective area and is suitable for deeper soundings. The receiver coil models can be used in combination and measures taken simultaneously using two receiver channels.

The WalkTEM system software is integrated with the SiTEM/Semdi processing and inversion software from the Aarhus HGG group. Other processing packages are supported as data is exported in standard USF format.



Principle of WalkTEM survey layout. A current cut-off in the transmitter loop emits an electromagnetic transient that induces secondary fields (eddy currents) in conductive structures. The receiver coil intercepts the transient and the resulting voltage decay is digitally recorded.

Both antenna types (RC-5 and RC-200) can be used individually or combined and are placed either inside or outside of the transmitter loop.

To collect additional soundings (e.g. imaging) simply move the measuring station to a new location.

Transmitter

Output current	15 A
On/Off Time	Adjustable from 2 ms to 60 ms in microsecond steps (10.000 ms [50 Hz] and 8.333 ms [60 Hz])

Receiver

Receiver input	2 Channels (Optionally 3 to 4 Channels with simultaneous recording)
Sampling	1 MHz each channel
Dynamic range	170 dB system 140 dB instantaneously
Repetition rate	From 500 Hz to 12.5 Hz in microsecond steps
Stacking Options	1 to 65,536 in single steps
Windows (Gates)	Up to 200 depending on time series selected in 3 sets (Optional user selectable)
Functions Measured	Transient response, TX current, TX turn-on and turn-off times, Battery voltage (external and internal), Automatic gain / offset calibration

Integrated Field PC

Processor	Low power Intel Atom, 1,6 GHz
Operating System	Windows XP Pro
Internal RAM	2 GB (DDR SO-DIMM module)
Hard disk capacity	Solid state disk of 100 GB or greater
I / O port	2 x USB 2.0 ports
Network interfaces	1 x IEEE 802.3 TP-10/100/1000 RJ-45 IP 67
WiFi interface	Integrated with built-in antenna

All specifications may change without notice as a result of ongoing product developments.

Field Equipment

Consult your local ABEM distributor for full details of the various configurations available.

General

Casing	Rugged Aluminum case meets IEC IP 66
GPS receiver	20 channels SirF star III chip
Display	8,4" Active TFT LCD, full color, daylight visible, resolution of 800 x 600
I / O ports	2 x KPT-19 for receiver coils
Power	2 x 8 Ah Internal NiMH 12 V DC power pack 10 - 34 V DC external power
Battery chargers	Integrated for internal batteries
Dimensions (W x L x H)	390 x 210 x 320 mm
Weight	14 kg
Ambient Temperature Range	- 20°C to + 55 °C operating ¹ - 30°C to + 70 °C storage ²

Note 1: Measuring speed may be reduced in high ambient temperatures and internal power dissipation.

Note 2: Non condensing.

Field Accessories (ordered separately)

RC-5 Active magnetic receiver coil (frame)	
Effective Area	5 m ² (20 turns)
Bandwidth	450 kHz
Dimensions (W x L x H)	590 x 590 x 90 mm

RC-200 Active Flexible magnetic receiver coil (cord)	
Effective Area	200 m ² (2 turns)
Bandwidth	100 kHz
Dimensions	10 x 10 meters

TL-1k6 Flexible transmitter coil (cord)	
Effective Area	1,600 m ²
Dimensions	40 x 40 meters
Conductor cross-sectional area	2.5 square mm

TL-10k Flexible transmitter coil (cord)	
Effective Area	10,000 m ²
Dimensions	100 x 100 meters
Conductor cross-sectional area	3.15 square mm

TL-40k Flexible transmitter coil (cord)	
Effective Area	40,000 m ²
Dimensions	200 x 200 meters
Conductor cross-sectional area	4 square mm

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