



CODEVINTEC

Tecnologie per le Scienze della Terra e del Mare

45° 27' 39.384" N
9° 07' 30.145" E

CMD Electromagnetic conductivity meters for multi layer survey



Features

- > Multi depth mapping (0.25-9m) with in-situ EM inversion
- > Manual or continuous measuring modes with GPS
- > Fast response, high temperature stability
- > One control unit for all probes
- > Map preview of measured area
- > Lightweight and rugged design
- > Rechargeable Li-Ion cells (one charging for 3-4 working days) or 6 AA cells

- > Easy control system with graphical screen and large memory
- > Data download via USB port or flash disk
- > Bluetooth communication with probe or GPS

Applications

- > Geological and civil engineering survey (for construction sites, maintenance of roads)
- > Groundwater protection
- > Environmental monitoring
- > Agriculture and forestry
- > Raw material prospecting
- > Archaeology
- > Metal object and network detection



CMD – Explorer CMD – Mini Explorer

CMD Electromagnetic Conductivity Meters represent large family of contactless geophysical instruments for fast assessment of ground conductivity and of in-phase (susceptibility). Single or multi depth probes designed for 0.25 – 9 m depth range allow single or multi layer mapping in classic or GPS positioning modes including vehicle applications. Due to high temperature stability and calibration accuracy CMD systems open correct way for electromagnetic inversion with results (sections with two- or multi-layered structures) well matched with DC resistivity imaging. This way could be especially appreciated under exacting field conditions like dry and icy soil.

Comfortable and transparent way of operation minimizes requirements for the user keeping a wide range of measuring highlights and reliability at the same time:

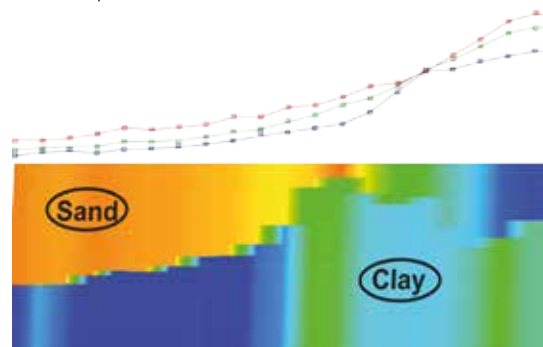
- > two manual and two continuous measuring modes with GPS or length mark positioning
- > stable factory calibration, built in EM inversion
- > high resistance against electromagnetic noise
- > very low weight and power consumption
- > good visibility of the graphic display under all conditions
- > large memory capacity
- > easy data transfer to PC using USB channel or USB flash disk
- > Bluetooth communication with probe or GPS
- > compatibility with inversion and mapping SW (IX1D, Res2DInv/Res3DInv, Surfer)



CMD – Explorer



CMD – Mini Explorer



Technical specifications

Probes

- | | |
|--|---|
| > Measured quantities | |
| > Apparent conductivity in mS/m. | |
| > In-phase ratio in ppt (magnetic susceptibility). | |
| > Measuring ranges | |
| > Apparent conductivity | 1000 mS/m, resolution 0.1 mS/m. |
| > In-phase ratio | ±80 ppt, resolution 10 ppm. |
| > Measurement accuracy | ±4% at 50 mS/m. |
| > Temperature stability | lower than 0.1 mS/m /°C (at slow temp. changes) |
| > Maximum sampling rate | 10 Hz |
| > Full and half depth range | (vertical and horizontal orientation of dipoles). |
| > Operating temperature | -10 °C to +50 °C |



| Probe | Effective High/Low Depth Range | Dipole Center Distance | Working Weight |
|--------------------------|--------------------------------|------------------------|----------------|
| CMD-Tiny | 0.7 / 0.35 m | 0.45 m | 0.4 kg |
| CMD-1 | 1.5 / 0.75 m | 0.98 m | 2.5 kg |
| CMD-2 | 3.0 / 1.5 m | 1.89 m | 3.6 kg |
| CMD-4 | 6.0 / 3.0 m | 3.77 m | 6.8 kg |
| CMD-4/6 | 6.0 / 3.0 m or 9.0 / 4.5 m | 3.77 m or 5.79 m | 8.9 kg |
| CMD-Explorer | 2.2 / 1.1 m | 1.48 m | |
| | 4.2 / 2.1 m | 2.82 m | |
| | 6.7 / 3.3 m | 4.49 m | |
| CMD-Mini Explorer | 0.5 / 0.25 m | 0.32 m | 2.0 kg |
| | 1.0 / 0.5 m | 0.71 m | |
| | 1.8 / 0.9 m | 1.18 m | |

Standard Probe Accessories

- > Transport aluminum case
 - > CMD-Tiny, CMD-1, CMD-2 35 x 12 x 116 cm
 - > CMD-4 44 x 12 x 146 cm
 - > CMD-4/6 44 x 21 x 146 cm
 - > CMD-Explorer 35 x 23 x 132 cm
 - > CMD-Mini Explorer 37 x 14 x 136 cm
- > Holder for control unit, carrying belt and harness (CMD-Explorer, CMD-4/6, CMD-4, CMD-2)
- > Probe holder with bluetooth adapter (CMD-Mini Explorer, CMD-1, CMD-Tiny)
- > Probe connection cable

Control Unit

- > **Attachable CMD control unit** works with all types of probes
- > **Five modes of measurements:**
 - > **Manual measurement** – the user starts measurement at each point by pressing the key or by buttons. The point position is updated automatically in the preset grid or can be entered directly. Each point can be re-measured or skipped and completed with a comment.
 - > **Continuous measurement** – data are measured and saved continuously in chosen measuring period. The positions on the profile are determined by length marks with consequent recalculation of positions of individual readings.
 - > **GPS Manual measurement** – the user starts measurement at each point by pressing the key or by button. The position is determined by GPS receiver.
 - > **GPS Continuous measurement** – data are measured and saved continuously in chosen measuring period. The position is determined by GPS receiver.
 - > **Search mode** – data are measured continuously but are not saved.
- > **Map preview** of measured area (up to 15000 positions).
- > **In-situ 1D inversion** (two-layered model).
- > **Integrated Bluetooth wireless** technology.
- > **Direct support of GPS receiver.** Longitude, latitude and altitude are shown and saved automatically. UTM/UPS recalculation is possible.
- > **Easy USB data transfer** or direct saving on USB flash disk.
- > **Factory and user calibrations** (calibrating data are stored in the probe).
- > **Measurement time** 0.1 – 20 s.
- > **128 MB data flash memory**
 - > max. 64 files.
 - > max. 4.8 millions measured points.
- > **Graphical LCD display** 320 x 240, white backlight.
- > **Power supply**
 - > **Internal exchangeable rechargeable Li-Ion battery pack** (integrated fully automatic intelligent battery charger).
 - > **Working time** 3-4 working days (24 – 32 hours of continuous measurement).
 - > **Internal exchangeable battery adapter** for 6 x AA single-use or rechargeable NiCd or NiMH batteries.
- > **Operating temperature** -10 °C to +50 °C
- > **Dimensions** 270x90 (145)x60 mm.
- > **Weight** 0.7 kg (with Li-Ion battery pack).



CODEVINTEC

Tecnologie per le Scienze della Terra e del Mare

© 2019 February - Codevintec Italiana srl, Milano

Standard Control Unit Accessories

AC-adapter for 100-240 V AC, 50-60 Hz

Cable for 12 V car socket supply

Internal battery holder for 6 x AA cells

Carrying belt (CMD-Mini Explorer, CMD-1, CMD-Tiny)

Cable for data download to PC and flash disk

CD with software

Operation manual

Optional Accessories

Bluetooth adapter for wireless communication with probe

Sledge for CMD-Tiny probe

Inversion and mapping SW

(IX1D, Res2DInv/Res3DInv, Surfer)



With reservations
for changes

CMD – 4/6



CMD – 4



CMD – 2



CMD – 1



CMD – Tiny

