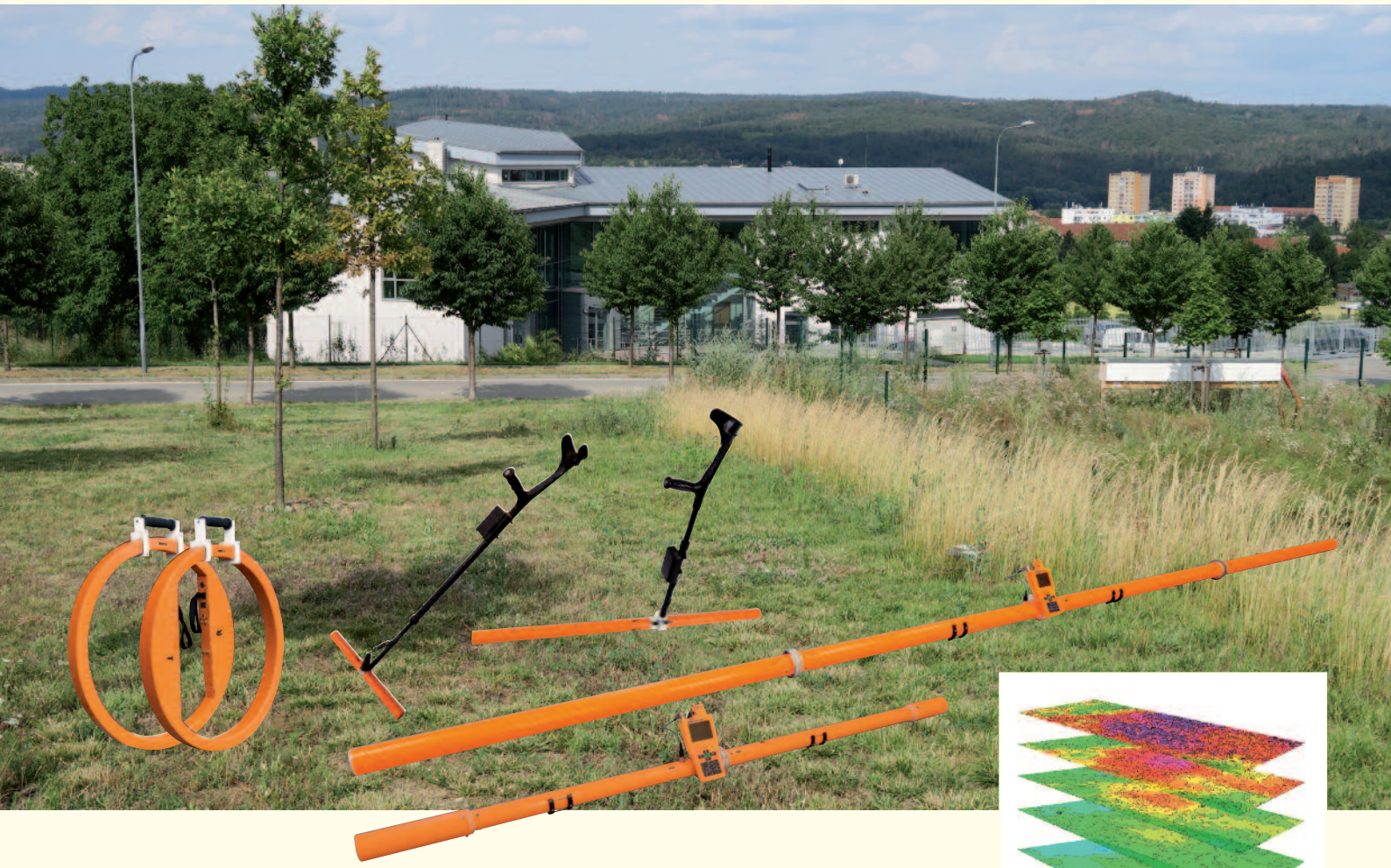
CMD ELECTROMAGNETIC CONDUCTIVITY METERS FOR MULTI-LAYER SURVEY



- Multi-depth profiling and mapping (0.15 – 60 m)
- Standard or custom-made probes (1 or 3 or 6 receivers)
- Fast sampling (up to 10 Hz), high temperature stability
- One control unit for all probes (B/W or colour display)
- Simple operation, optional smartphone app
- Manual and continuous measuring modes with GPS
- Two Bluetooth channels (for probe and external GPS)
- Real-time clock, map preview of area coverage
- Data download via USB or flash disk
- Rechargeable Li-Ion battery lasts for 2-3 working days
- Lightweight and rugged design

Applications: Geological and geotechnical survey, agriculture, archaeology, groundwater protection, environmental monitoring, raw material prospecting, metal object and network detection.

GF Instruments

Large family of **CMD electromagnetic conductivity meters** is designed for survey depth ranges from 0.15 to 60 m. Used contactless method allows fast measurement of conductivity and inphase under all field conditions (including very dry and icy ground). Probes are equipped with 1, 3 or 6 receivers with excellent temperature stability. This way makes high resolution depth graded mapping as well as imaging of sections possible and useful for wide range of walking and moving applications.

CMD - 4/6 single-depth probe with variable depth range 6.0 / 3.0 m or 9.0 /4.5 m for similar purposes like CMD-4 with significantly enhanced survey depth.

CMD-Explorer three-depth probe with depth ranges 2.2 / 1.1 m, 4.2 / 2.1 m, 6.7 / 3.3 m for extra wide range of applications with evaluation of vertical and horizontal conductivity changes.

CMD - 4 single-depth probe with 6.0 / 3.0 m depth range with wide sphere of applications (geological survey, mapping of pollution plumes, raw material prospecting).

CMD-Mini Explorer
three-depth probe
with depth ranges 0.5 / 0.25 m, 1.0 / 0.5 m, 1.8 / 0.9 m
for archaelogy, agriculture and civil engineering, allowing immediate judgement of vertical conductivity gradient.

CMD-Mini Explorer 6L
six-depth probe
with depth ranges 0.3 / 0.15 m, 0.5 / 0.25 m, 0.8 / 0.4 m, 1.1 / 0.5 m, 1.6 / 0.8 m, 2.3 / 1.1 m for high resolution mapping and section imaging.

CMD - 1 economy single-depth probe
with 1.5 / 0.75 m depth range
for archeology, agriculture and buried metal object detection.

CMD - 2 single-depth probe
with 3.0 / 1.5 m depth range
frequently used for assessment of corrosivity risk at pipeline construction and for geologic judgement of construction sites.

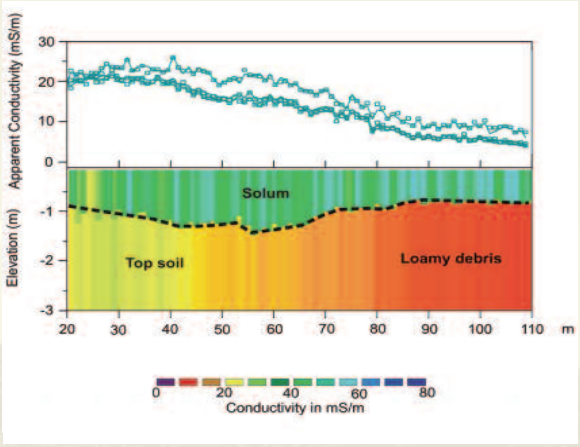
CMD - Tiny single-depth probe
with 0.7 / 0.35 m depth range
for assessment of very shallow objects in the frame of civil engineering, agriculture and archaeology.

CMD - DUO single-depth, two-men operated probe
with variable depth range 15 / 7.5 m or 30 / 15 m or 60 / 30 m for measurement of deeper situated structures (weathered zones, bedrock, cavities).

Probe	Effective High/Low Depth Range	Dipole Center Distance	Working Weight
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	
CMD-Mini Explorer 6L	0.3 / 0.15 m	0.2 m	2.5 kg
	0.5 / 0.25 m	0.33 m	
	0.8 / 0.4 m	0.50 m	
	1.1 / 0.5 m	0.72 m	
	1.6 / 0.8 m	1.03 m	
	2.3 / 1.1 m	1.50 m	
CMD-Explorer	2.2 / 1.1 m	1.48 m	8.0 kg
	4.2 / 2.1 m	2.82 m	
	6.7 / 3.3 m	4.49 m	

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 (variable depth)	6.0 / 3.0 m	3.77 m	6.1 kg
	or		
	9.0 / 4.5 m	5.79 m	8.9 kg
CMD-DUO (variable depth)	15 / 7.5 m	10 m	6.5 kg transmitter
	or		5.4 kg receiver
	30 / 15 m	20 m	
	or		
	60 / 30 m	40 m	

Technical Specifications



Probes:

- Measured quantities and ranges:
  - Apparent conductivity 1000 mS/m, resolution 0.1 mS/m.
  - Inphase ratio ±80 ppt, resolution 10 ppm.
- Measurement accuracy: ±4% at 50 mS/m.
- Temperature stability: better than 0.1 mS/m / °C at slow temp. changes.
- Maximum sampling rate: 10 Hz.
- Full and half depth ranges (vertical and horizontal orientation of dipoles).
- Power supply: rechargeable Li-Ion battery lasts 2-3 working days (except. CMD-DUO transmitter).
- Operating temperature: -10 °C to +50 °C.

Control unit:

Connection with probe is provided by cable or Bluetooth unit.

- Five modes of measurements:
  - Manual measurement – the user starts measurement at each point by pressing the key or by probe button. 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 probe 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).
- Two integrated Bluetooth channels.
- Detachable GPS receiver (UTM/UPS recalculation possible).
- USB data transfer or direct saving on USB flash disk.
- Factory and user calibrations (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 B/W or colour display with backlight.
- Real-time clock.
- Power supply:
  - Rechargeable Li-Ion battery.
  - Supplementary 6 AA batteries (single-use or rechargeable NiCd or NiMh).
  - 12 V car socket.
- Operating temperature: -10 °C to +50 °C.
- Dimensions: 200 x 50 x 110 mm.
- Weight: 0.65 kg (with Li-Ion battery).

Standard Probe Accessories:

- Transport aluminum case (dimensions and shipping weight):

- CMD-Tiny, CMD-1, CMD-2	117 x 14 x 36 cm	13.9, 15.2, 16.4 kg
- CMD-4	146 x 14 x 45 cm	23.5 kg
- CMD-4/6	147 x 22 x 46 cm	28.4 kg
- CMD-DUO	72 x 20 x 93 cm	32.7 kg
- CMD-Mini Explorer	137 x 14 x 37 cm	17.0 kg
- CMD-Mini Explorer 6L	172 x 14 x 37 cm	20.0 kg
- CMD-Explorer	134 x 25 x 36 cm	25.5 kg

- Holder for control unit, carrying belt and harness (CMD-Explorer, CMD-4/6, CMD-4, CMD-2)
- Probe holder with Bluetooth unit, AC adapter 100-240 V (50-60 Hz) and supplementary 6 AA battery holder (CMD-Mini Explorer, CMD-Mini Explorer 6L, CMD-1, CMD-Tiny)
- Probe connection cable

Standard Control Unit Accessories:

- AC-adapter 100-240 V AC (50-60 Hz)
- Cable for 12 V car socket supply
- Supplementary 6 AA battery holder
- Carrying belt (CMD-Mini Explorer, CMD-Mini Explorer 6L, CMD-DUO, 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
- Husqvarna harness (adapted for front and side carrying)
- Inversion and mapping SW (IX1D, Res2DInv/Res3DInv, Surfer)

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