

INTRODUCTION

Underground pipelines are an important part of urban infrastructure. Urban underground pipelines, including water supply, drainage, gas, heat, telecommunications, electricity, industrial pipelines and other broad categories are very important for city or town functions.

At the same time, in the process of urban planning, design, construction and management, if there is no complete and accurate underground pipeline data or mapping, the city designers and operators become “blind”, and the same can even cause significant losses.

In recent years, with the accelerated urbanization process and the rapid development of urban construction has increased manifold and Cable Route Locator serves an an important tool in the hands of the cities.



The Metravi CL-2160A underground pipeline detector detects underground pipelines and cables without the need for excavations. It assists with:

- Accurate positioning and buried depth measurements
- Accurate search results for underground pipes outside the coating damage point
- Search for buried cable fault point location
- Metal pipeline, inspection line detection
- Pipeline management and maintenance
- Planning and construction by local municipality
- Inspections for power supply and other departments for pipeline inspections

XA-2160A Pipeline Detector Features:

(1) MULTI-FUNCTION

- Transmitter Function: with the induction method, direct method and clamp method - three signal application mode, suitable for different applications.
- Receiver Function: used for underground pipes, cable position, direction, depth and tube current measurement.
- Positioning Function: the left and right positioning arrows indicate the target pipeline position. Positioning is fast and accurate; front and rear arrows and dB values indicate the location and size of the damage points of the coating.
- Back-light Function: suitable for night use.
- GPS Geo-location Function: automatic mapping of pipeline.
- Reporting Function: professional data-analysis software and automatic detection report generation.
- Unique Functions: for failure positioning (pipe failure is the outer coating damage, cable failure is the outer sheath damage) to detect underground pipeline insulation damage.

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- **Current Measurement Function:** measures the current applied by the transmitter to the pipe under test.
- **Multimeter Function:** measurable output voltage, line voltage, line current, impedance and power. Test the cable continuity and insulation quality before and after cable fault finding.
- **External Induction Clamp:** to be used for testing the cables that you cannot directly inject signals into.



(2) HIGH POSITIONING ACCURACY

A variety of measurement modes for pipeline positioning (valley mode, peak mode, broad peak mode, peak arrow mode). The transmitter and receiver can verify each other to ensure the accuracy of pipeline positioning.

- **Maximum value method:** Peak mode, broad peak mode, peak arrow mode - can be used to determine the horizontal component (H_x) or horizontal gradient (ΔH_x) changes, according to its maximum position to locate.
- **Minimal method:** the use of the valley model, by measuring the vertical component (H_z) changes, according to its minimum position to locate.

(3) MULTI-MEASURING DEPTH METHOD

With multiple signal frequencies available, the permutation combination can be changed arbitrarily and the receiver can verify the transmitter signals.

- Double - level coil direct reading method;
- Single - level coil 80% method, 50% method;
- 45 degree method.



(4) STRONG ANTI-INTERFERENCE

(5) **Observed parameters:** both measured horizontal component (H_x), vertical component (H_z) and can measure the level gradient (rH_x).

(6) **Transmit power:** the transmitter output power of 10W is continuously adjustable, according to the need.

(7) Working frequency:

Transmitter frequency: 128Hz, 512Hz, 1KHz, 2KHz, 8KHz, 33KHz, 65KHz, 83KHz.

Receiver frequency: radio, 50Hz, 100Hz, 128Hz, 512Hz, 1KHz, 2KHz, 8KHz, 33KHz, 65KHz, 83KHz.

According to the target pipeline characteristics (material, structure, depth, length, etc.) and the application, you can select the appropriate operating frequency.

(4) EASY TO OPERATE

(5) **Intuitive User Interface:** features graphical display, which can continuously and in real-time display various parameters and signal strengths.

(6) **Auto:** Automatically switches to dual-level antenna mode when measuring depth and automatically adjusts the receiver sensitivity to optimize the measurement signal and automatically recovers to the pre-sounding mode.

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6) LONGER BATTERY OPERATION TIME AND COST SAVING

The transmitter is equipped with a large capacity lithium battery pack, making it ideal for the field, as it meets the working day's power supply needs and can also be recycled, hence, greatly reduces detection costs.

7) BATTERY AND MAINS OPERATED

If the transmitter battery is sufficient, the built-in battery pack power supply is used. If the transmitter battery power is low, it can be directly connect to external dedicated power supply.

CL-2160A Pipeline Detector Technical Parameters

1) Receiver

Positioning accuracy: ±5% of depth

Depth measurement accuracy: ±5% of depth (no adjacent line interference) Current measurement accuracy: ±5% of actual Current

Depth measurement range: <6m

Working mode: Valley method, Peak method, Broad Peak method, Peak Arrow method

Operating frequency: Radio 50Hz, 100Hz, 128Hz, 512Hz, 1KHz, 2KHz, 8KHz, 33KHz, 65KHz, 83KHz (operating frequency according to product specifications and different specifications)

Working temperature: -20°C~ +50°C

Battery: 7.4V lithium battery

Dimensions: 595mm × 136mm × 238mm

Weight: 1.6Kg (including battery)

2) Transmitter

Output power: 10W

Operating frequency: 128Hz, 512Hz, 1KHz, 2KHz, 8KHz, 33KHz, 65KHz, 83KHz

According to the target pipeline characteristics (material, structure, depth, length, etc.), the appropriate operating frequency can be selected.

Working mode: Direct connection, induction and clamp - three modes of automatic conversion

Battery: 14.8V built-in lithium battery pack

Working temperature: -20°C~ +50°C

Dimensions: 348mm × 228mm × 84mm

Weight: 2.5Kg (including battery)

CL-2610A Pipeline Detector Accessories

One Receiver and One Transmitter

Direct connection signal line

Sensor clamp

Two output lines

Two grounding rods

Two chargers

Connect a magnet

220V power cord

User manual

Carrying Bag



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