



REFINED MARKER TECHNOLOGY FOR

UNDERGROUND UTILITIES

DIG SAFE. DIG RIGHT. SAVE TIME.

Mark and Locate ALL Buried Services:

Water / Gas / Comms / Electric & Others.



Legislation around the world is getting tighter regarding street-works.



France

Building without destroying is the objective of the NF S70-003 Standard. In force in France since July 2012, it oversees the preparation and execution of works carried out near underground and overhead networks.



UK

In the UK there are similar recommendations but not yet legislation. But those digging must always beware and check with other utilities and survey the best they can.



North America & Australia

Similarly, in North America and Australia, there are various "dial before you dig" and "job-ticketing" schemes operated nationally, by states and cities. All aiming to reduce disruption end ensure that the best possible practices are followed.



Main challenge for network operators facing these new standards:

- Increase safety during works
- 3 3

Preserve buried assets

- **⊗** Environmental protection
- **⊘** Resident impact

- **⊘** Costs management

A marker for each type of network

Drinking water, gas, telecommunications, sanitation, electricity, lighting, etc.

Passive markers are an essential tool for network asset management. They are buried alongside new networks as they are deployed or during maintenance work.

Used for marking the network and its key points (connections, elbow, depth or direction change), they have demonstrated their unique ability to precisely locate and identify the network location regardless of the type of the soil in which they are buried (earth, sand, concrete, etc.).

Passive markers can be identified in the presence of power supply networks, metal pipes, grids and other passive markers, provided that the installation conditions are met.

Red for electricity, blue for water, etc. these markers with several different colors and frequencies save time, optimize human and material resources and help avoid costly maintenance errors.





REFINED MARKER TECHNOLOGY

FOR EVERY APPLICATION

Passive markers: Precision localization, over 1.50 m deep.



The passive marker uses a magnetic antenna. It consists of an inductive coil acting as an antenna and capacitance allowing the LC circuit to resonate at the precise working frequency. Tempo Communications markers are passive antennas with no power or active components. The marker derives its energy from the magnetic field of the detector.

Their housing is made of the same high-density polyethylene as the majority of buried plant, very robust, waterproof, and resistant to the action of chemicals and temperature hazards. The markers are interoperable since they operate on well-defined frequencies according to industry standards: 145.7 kHz for drinking water, 101.4 kHz for telecommunications, 83 kHz for gas, etc.

The markers are detected by induction (without

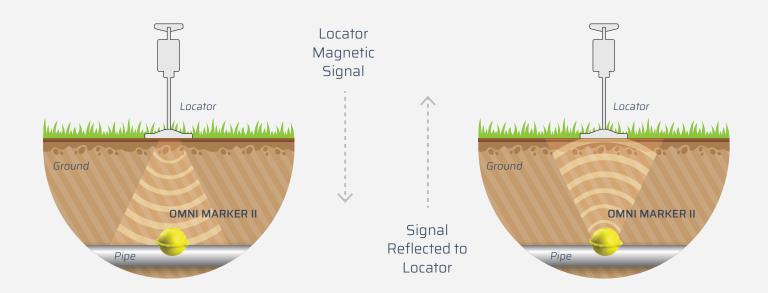
contact, from above the surface). This non-intrusive technique makes it possible to locate all pipelines, regardless of their nature. This enhances the quality of any survey carried out before work; helping to reduce confusion and enhance safety.

Marking your networks: <1%* of the overall cost of a project. Less than the cost of pulling out a pipeline!

By positioning them throughout the network and using complementary solutions (marker detector and GPS plus GIS database), they can be mapped, point by point, with GPS coordinates (X,Y) and the depth of the network (Z).

*According to studies conducted by Tempo Communications.

May be changed without notice





Omni Marker II's Self-Leveling Large Diameter Coil Structure Ensures Precise Location.



Easily Located Up To 5 ft. Away

The Omni Marker II provides a strong field that is easy to detect months or years later, with a signal peak directly above the marker for precise location within inches.

No need to stay level when buried.

The Omni Marker II's self-leveling coil assembly means you can "fit and forget". Attach the marker to the service and backfill. The coil will settle to give a precision location directly above.



The Omni Marker II contains no batteries or active components, and is built using the same high-reliability, long life materials as its predecessor ensuring that these markers will



Passive, High Reliability Design Assures Lightweight, with No Hazardous Chemicals

Many Years of Service The Omni Marker II contains no potentially hazardous chemicals. This eliminates the need for material safety data sheets. Plus, the Omni Marker II's durable, lightweight design keeps your shipping and storage costs low while giving you last as long as your buried plant. years of reliable service.

Compatible with All Marker Locators

Because Omni Marker II uses industry standard frequencies, they will work with any electronic marker locating devices. Ask your sales representative about the EML100 Marker-Mate™ locator which can detect them all with it's unique "scan" mode.



GENERAL				
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Case	High density polyethylene			
Indentification	By color and type of network engraved			
Range	1.5 meters deep for all Tempo marker models.			
Design Service Life	More than 50 years			
ELECTRIC				
Detection Field	Dipole magnetic field			
MECHANICAL				
Marker Diameter	100 mm minimum			
Weight	154 grams			
External Materials	High density polyethylene. Marker is waterproof and resistant to acids, alkalis and solvents. The same material as used for the majority of underground plant and accessories.			

APPLICATION	COLOR	FREQUENCY	MODEL	PART NUMBER
Non-Potable Water	Purple	66.4 kHz	OM-01	52085010
Cable TV	Orange Black	77.0 kHz	OM-02	52085007
Gas	Yellow	83.0 kHz	OM-03	52085008
Fiber Optic	Yellow Black 🛑	92.0 kHz	OM-04	52085016
Telephone	Orange	101.4 kHz	OM-05	52085012
Sanitary	Green	121.6 kHz	OM-06	52085009
Europower	Blue Red 🛑	134.0 kHz	OM-07	52085015
Water	Blue	145.7 kHz	OM-08	52085013
Power	Red	169.8 kHz	OM-09	52085011