

# Marker Solutions for the Power Industry

The 3M™ Electronic Marker System (EMS) may help save electric utilities time and money by allowing utility field crews to quickly pinpoint the location of all types of buried facilities including cable runs, splices, vaults, conduits and road crossings. Using EMS markers during construction, installation and maintenance virtually eliminates the time consuming search for “lost” facilities.



## MARKERS THAT LAST

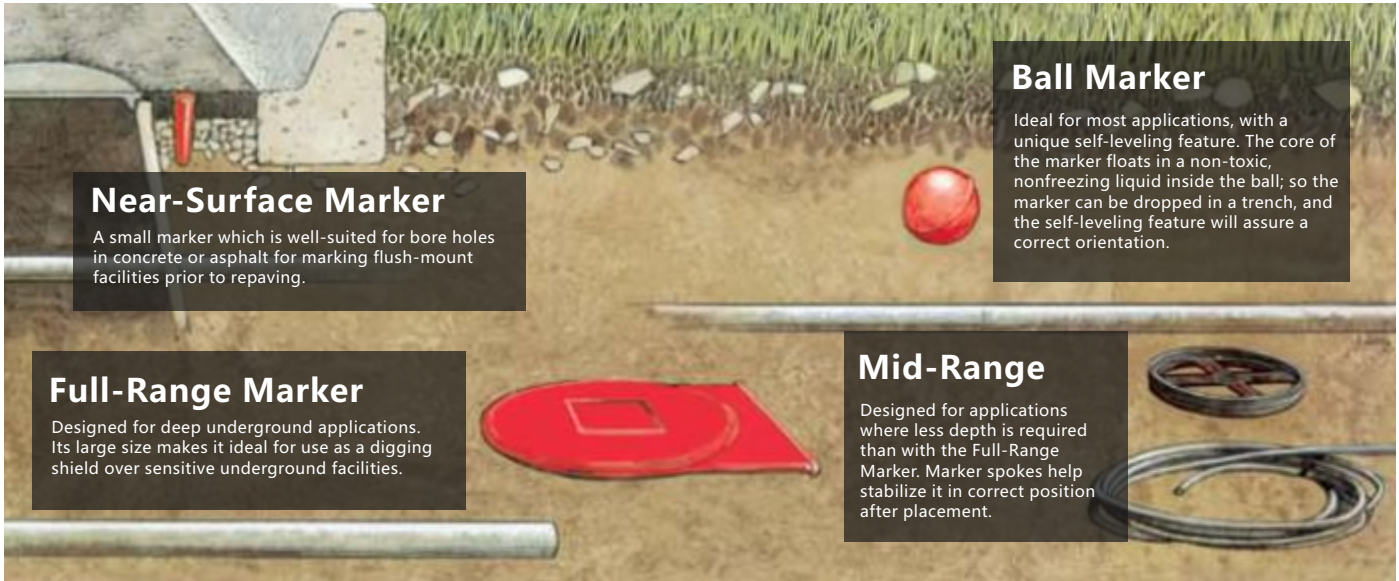
With our Full-Range, Mid-Range, Ball and Near-Surface Markers, there is a marker to meet almost every need. A four-inch Disk marker is also available for marking hand holes. These markers easily attach to lids or covers over flush-mounted facilities. Markers are passive antennas with no internal power source to run down. Their water-resistant, polyethylene shells are impervious to minerals, chemicals and the temperature extremes normally found underground.

## 3M ID MARKERS

3M iD markers are designed to provide an accurate, convenient, long-lasting method of marking underground assets. In addition, these markers may be programmed to include customer-specific information such as facility data, type of application, material type and size, placement date and other important details.



3M™ Electronic Marker System for the Power industry



### Near-Surface Marker

A small marker which is well-suited for bore holes in concrete or asphalt for marking flush-mount facilities prior to repaving.

### Ball Marker

Ideal for most applications, with a unique self-leveling feature. The core of the marker floats in a non-toxic, nonfreezing liquid inside the ball; so the marker can be dropped in a trench, and the self-leveling feature will assure a correct orientation.

### Full-Range Marker

Designed for deep underground applications. Its large size makes it ideal for use as a digging shield over sensitive underground facilities.










### Mid-Range

Designed for applications where less depth is required than with the Full-Range Marker. Marker spokes help stabilize it in correct position after placement.

## THE SAFE CHOICE

There is no guesswork with the 3M Electronic Marker System. 3M markers operate even in the presence of metal conduit or pipe, metallic conductors, fences, AC power lines and electronic markers of other utilities. All EMS markers are color-coded to APWA standards for visual reference and each utility has its own frequency. For electric utilities, all markers are red in color. EMS signals provide positive identification of each utility, thus helping to reduce the risk of accidentally locating and excavating other buried facilities.

## 3M POWER UTILITY MARKERS

Product Name	Description	Stock Number
 <p>3M™ EMS Near-Surface Marker <b>1433</b></p>	<p>Near-Surface Marker - designed to provide an accurate, convenient, long-lasting method of marking underground and street-access facilities.</p>	80610230379
 <p>3M™ iD Near-Surface Marker <b>1433-XR/iD</b></p>	<p>3M iD markers may be programmed to include customerspecific information such as facility data, type of application, material type and size, placement date and other important details.</p>	80611321300
 <p>3M™ Disk Marker <b>1412-XR</b></p>	<p>Extended Range Disk Marker - designed to provide an easy, accurate method of locating flush-mounted facilities which become covered by backfill or other obstructions, such as snow or overgrown vegetation. (Do Not Direct Bury)</p>	80611161193
 <p>3M™ iD Disk Marker <b>1412-XR/iD</b></p>	<p>3M iD markers may be programmed to include customerspecific information such as facility data, type of application, material type and size, placement date and other important details. (Do Not Direct Bury)</p>	80611303522
 <p>3M™ EMS 4" Ball Marker <b>1402-XR</b></p>	<p>Extended Range Ball Marker - provides self-levelling design providing accurate, horizontal position regardless of how it is placed in the ground and making the job of precisely locating easier.</p>	80611161144
 <p>3M™ iD Ball Marker <b>1422-XR/iD</b></p>	<p>3M iD markers may be programmed to include customerspecific information such as facility data, type of application, material type and size, placement date and other important details.</p>	80611142201
 <p>3M™ EMS Mid-Range Marker <b>1256</b></p>	<p>Mid Range Marker - designed to provide an accurate, convenient, long-lasting method of marking underground power facilities.</p>	80610221923
 <p>3M™ EMS Full-Range Marker <b>1251</b></p>	<p>Full-Range Marker - designed to provide an accurate, convenient, long-lasting method of marking underground power facilities.</p>	80610221295
 <p>3M™ iD Full-Range Marker <b>1251-XR/iD</b></p>	<p>3M iD markers may be programmed to include customerspecific information such as facility data, type of application, material type and size, placement date and other important details.</p>	80611321243

## ELECTRICAL SPECIFICATIONS

	3M iD Markers Read Range		3M iD Passive Markers Read Range*
	With a U.S. Locator	With a Export (CE) Locator	
Near Surface	3 ft (0.9 m)	10 cm	2 ft (0.6 m)
Ball Marker	5 ft (1.5 m) 5 ft (1.5 m)	1.2 m (Tel, Gas, WW, Comm) 1.0 m (Pwr, Wtr)"	
Mid Range	N/A	N/A	6 ft (2 m)
Full Range	9 ft (2.75 m)	2.2 m	8 ft (2.4 m)

## THE EMS TELECOMMUNICATIONS SERIES CAN BE USED TO MARK:

- Buried splices
- Service drops
- Buried Transformers
- Street lighting
- Road crossings
- Distribution loops
- Bends
- Conduit stubs
- Repair points
- Service laterals
- Hand hole covers
- Man hole covers
- Utility crossings

## THE EMS TELECOMMUNICATIONS SERIES CAN BE USED TO MARK:

3M™ Dynatel™ offers the following electronic marker and multipurpose locators.



3M™ Dynatel™ Marker Locator 1420-iD



3M™ Dynatel™ Cable/Pipe and Marker Locator 2250M-iD



3M™ Dynatel™ Cable/Pipe/Fault and Marker Locator 2273M-iD