

MapIt™ Fault Distance Monitor

**Why locate transformers?
Why open transformers?
Why get out of your truck?**

Extend Your Outage/Workflow Management System To Include The New Fault Distance Monitor, Which Can Significantly Reduce Customer Minutes Of Service Interruption Caused By Underground Cable Faults.

Don't get caught in the dark ages or with your lights out, when the latest technology is available today that saves time and money while increasing reliability.

- **High Tech at Low-Tech Price** – The latest technology industry has to offer is now available at prices that are very affordable.
- **Reduces Installation Costs** – One installation required for an entire circuit (loop or radial). **12 times faster** on average than outfitting circuit with FCIs.
- **Quicker Installation** – Larger number of circuits can be outfitted compared to FCIs.
- **Reduces Operating Costs** – Simplest way to locate faults. Using truck mounted computer, click on transformer in circuit map, FDM is interrogated using radio link, and fault location is displayed graphically.
- **Reduces Inventory** – One size fits all. Fewer units need to be purchased and installed compared to FCIs.
- **Improve Power Quality** – Shorter outage time lowers standard outage indices and creates happier customers. A necessity for any rate increase consideration.
- **Locate Faults Faster** – Drive to fault region, interrogate FDM, and plan switching from truck. Perform switch and restore power. It doesn't get any easier. Up to **75% time and labor savings** can be realized, compared to other methods.



Figure 1. MapIt™ Fault Distance Monitor

Standard Features

- **Remote Interrogation From Truck** – Long transmission distance can access rear lot, sub-surface and hard to access locations without getting out of truck. Visual contact with transformer is not required.
- **True Peer-To-Peer Network** – No network infrastructure required. Unique Vendor Identification filtering technology ignores unsolicited messages.
- **Spread Spectrum Technology** – Advanced technology that operates over the license-free ISM band. Provides long transmission distances with low power consumption.
- **Microprocessor Based System** – Smart system with communication interface. Readily adaptable to distribution automation equipment.
- **Utilize Existing Resources** - Integrates into existing Outage/Workflow Management System, accelerating return on investment. Common interface (no training).
- **Virtually Independent of Fault Current** – One size fits all. Even works with very low fault currents.
- **No False Tripping** – In-rush restrain and capacitive discharge problems inherent to FCIs is eliminated.
- **No Reset Required** – Unit captures, time stamps, and stores data in memory queue.

Overview

Remote Monitoring Systems, Inc. designs, manufactures, and markets a product line of Fault Distance Monitors that fit your underground fault locating needs. Fault Distance Monitors combine advanced microprocessor based digital signal processing technology into affordable solutions.

Utilities that extend their Outage/Workflow Management System to include truck-mounted computers with circuit maps, can realize further returns on their investment. A Remote Monitoring Systems' MapIt™ Radio Modem is attached to the serial port on the truck-mounted computer, and used to remotely interrogate a MapIt™ Fault Distance Monitor mounted in a transformer. Without getting out of the truck, a lineman can open the map for a failed circuit, click on a transformer, and view the indicated failed cable location on the map in front of him. This electronic information can be shared with dispatch personnel back in the office and archived for future planning. Figure 2 illustrates a MapIt™ Fault Distance Monitor radio link between a truck-mounted computer and a padmount transformer.

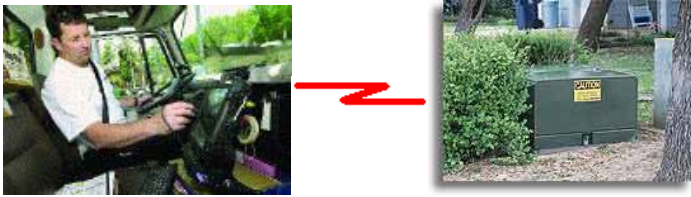


Figure 2. Overall System Radio Link

A single MapIt™ Fault Distance Monitor is installed at the normal open-point of an underground residential distribution circuit. The single unit monitors the entire circuit from the normal open-point to the source fuse, eliminating the need to install FCIs in every transformer. Significant time and cost savings are achieved up front by having only a single installation. The savings continue through operations. The fault information is concentrated at a single location, eliminating the need to access every transformer. This significantly reduces the customer minutes of electrical service interruption, resulting in happier customers and improved reliability. This is all achieved at up to a **75% savings in time labor costs**, compared to other methods.

Configurations

MapIt™ Fault Distance Monitors are ordered with either one or two Voltage Probes. A unit with a one Voltage Probe is used to monitor a complete radial-type circuit. A unit with two Voltage Probes is ideally suited for

installation at a normal open-point, where the single unit monitors both halves of the loop circuit. MapIt™ Fault Distance Monitors replace 12 or more FCIs, on average.

Installation

MapIt™ Fault Distance Monitor consists of three component parts; a Control Module, Voltage Probe(s), and a Radio Interface Module. The Control Module can be mounted in any orientation, and is provided with convenient mounting ears. The Voltage Probe attaches to a test point elbow as shown in Figure 3. The Radio Interface Module is attached to a Lexan plate that mounts in standard transformer knockouts. Figure 4 illustrates a standard Radio Interface Module mounting.

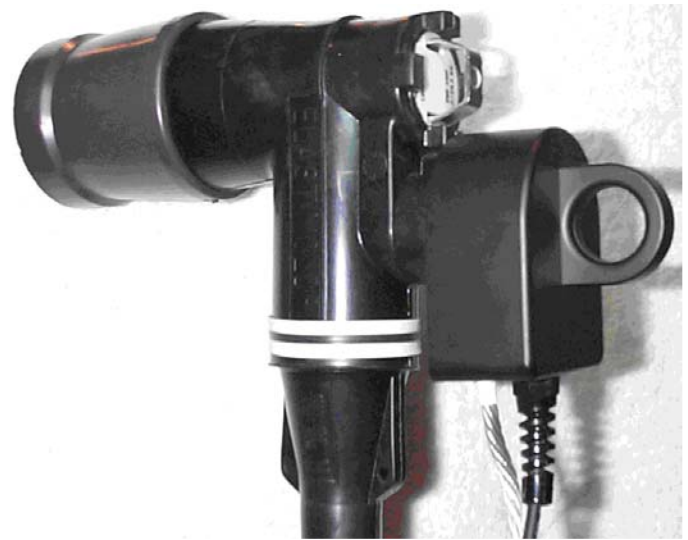


Figure 3. Voltage Probe Attached to Test-Point Elbow

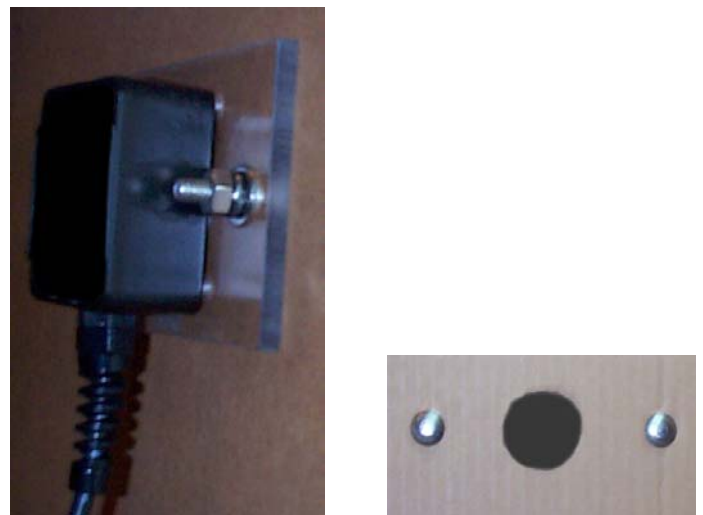


Figure 4. Radio Interface Module Installed and Viewed from Inside and Outside of Field Equipment

Specifications

Operating Temperature	-40°C to +85°C
Power Requirements	120 VAC, 60 Hz
Backup Battery Type	Long-Life Lithium
Monitor Cable Lengths (each channel)	Up to 10,000 Ft (3048 m)
Accuracy	+/- 2% Full Range
Radio Link Range	1500 Feet (457 m)
Elbow Ratings	200 A & 600 A @ 15, 25 & 35 KV
Certification	FCC Part 15.247, Industry Canada

Interrogation System

Remote Monitoring Systems offers the compatible MapIt™ Radio Modem that connects to the serial port of a truck-mounted computer. Software is provided with the modem for communication and control between the Outage/Workflow Management System and field installed MapIt™ Fault Distance Monitors. Figure 5 illustrates a reported fault output on a truck-mounted computer that hosts the Outage/Workflow Management System.

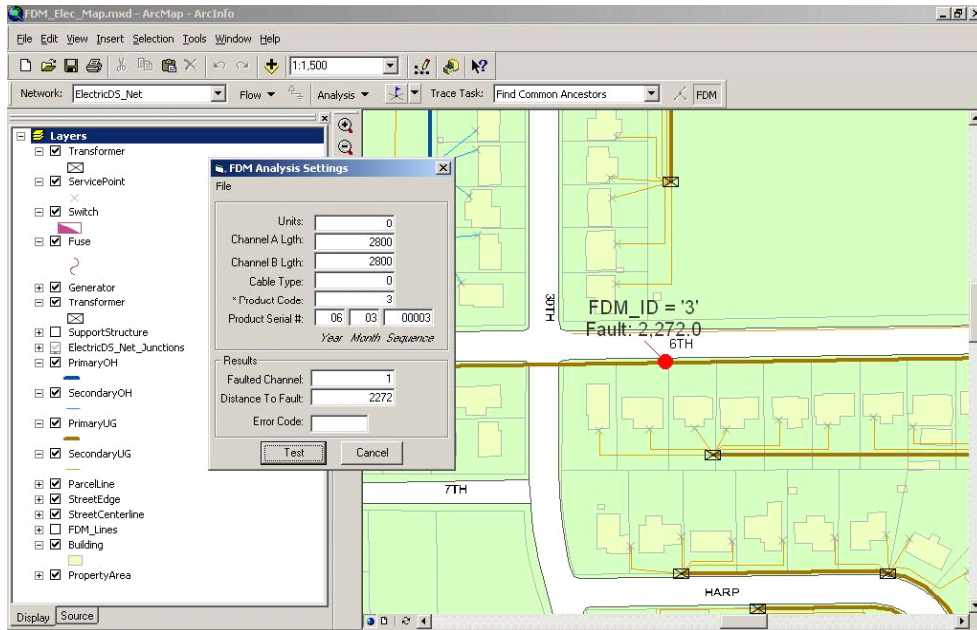
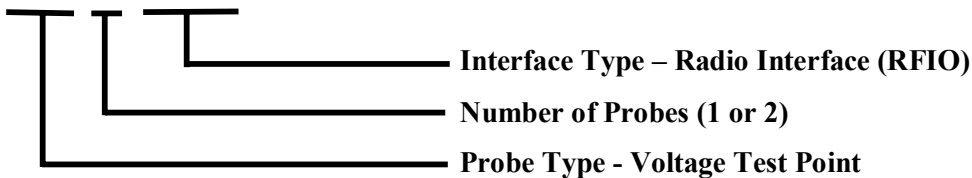


Figure 5. Outage Management System Circuit Map Indicating Faulted Location

Ordering Information

FDM-VTP2-RFIO



Available Part Numbers

FDM-VTP1-RFIO – MapIt™ FDM with one Voltage Probe and Radio Interface Module

FDM-VTP2-RFIO – MapIt™ FDM with two Voltage Probes and Radio Interface Module

For more information contact:

sales@cable-fault.com

support@cable-fault.com

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