



DELIVERING RELIABLE TOMORROW

# R - F E R M

REMOTE FAULT TIME EARTH RESISTANCE MONITORING

# S Y S T E M



*A N Y T I M E*

*A N Y W H E R E*

Accurately designed and functionally maintained earthing system is an imperative need in the electrical safety & reliability segment. These systems protect life, livestock and assets from fatal accidents and irrevocable damage caused during high intensity operational faults and during high energy dissipation.

Remote-Fault Time Earth Resistance Monitor (R-FERM) is an IIoT system that works on advanced patented technology. This next-gen product transposes manual monitoring of earthing system to an automated online monitoring network.





# DIGITALIZING ELECTRICAL EARTHING FOR A SAFER TOMORROW

Manav Energy has indigenously developed R-FERM, which is capable to automate earthing system measuring and maintenance practice.

## PREVENTION IS BETTER THAN CURE

R-FERM provides the ability to prevent accidents caused by unhealthy / faulty earthing system by monitoring of individual earth pits.

## FAULT ALARM SYSTEM


On the occurrence of fault the concerned personal is notified. The behavior of the earth pit during fault can be observed. If any discrepancy found, corrective actions can be taken immediately.

## DATA ACCESS AND ESCALATION

The system consists of 3 level hierarchy allowing the higher levels to supervise the lower level data. If initial level supervisor does not take action in the set time period, higher level supervisor is notified for corrective measures.

## REDUCED TIME AND EFFORT

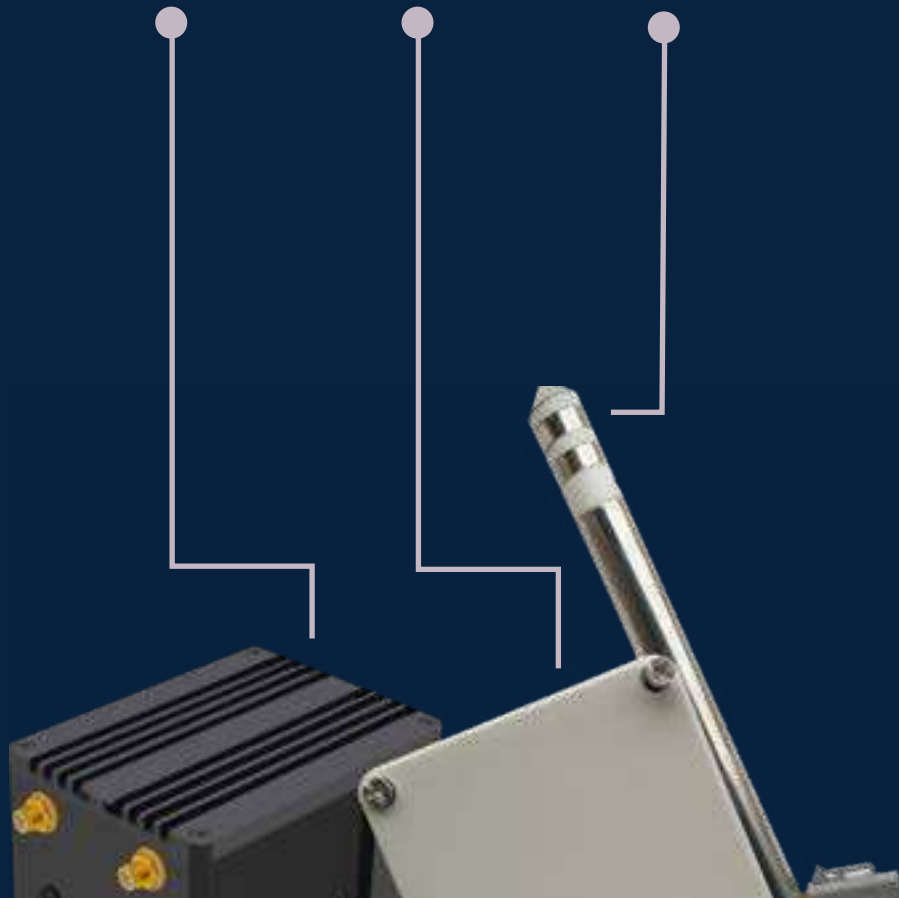
Manual measurement of earthing system consumes high effort, time and money. R-FERM digitalized concept reduces time and effort and provides an automated system for maintenance.



# FERMTALK

Fermtalk is the hardware setup used for continuous monitoring and predictive maintenance of each earthing system. It consists of three components.

INHEED | COMBYTE | DATABEE



# FERMSOFT

FermSoft is a web application that allows users to view data and take necessary action to maintain their earthing system. This application comes with relevant security features, cloud storage facility and user-friendly interface to monitor and analyze data.





# FERMTALK



## DATABEE

Databee is a sensor which measure the earth pit resistance. It is connected to the Combyte to share its measured value.

These sensors are placed inside the earth-pit for accurate measurement.

### SPECIFICATION

Power Supply Voltage	3.3 V
Current Consumption	50 mA
Product Dimension	Length : 650 mm   Diameter : 19 mm
Ambient Operating Temperature	0 to 70 °C
Material	SS316L
Net Weight	680 g

## SPECIFICATION

Power Supply Voltage	3.6 V
Current consumption	120 mA
Product Dimension	75 x 80 x 75mm
Ambient Operating Temperature	0 to 50 °C
Enclosure	IP68 / Flameproof
Net Weight	465 g
Battery	3.6V   19Ah
Frequency Range	865-867Mhz

## COMBYTE

This device is placed next to Databee. It sends the data received from the Databee to cloud server through Inheed. In simple terms it is connected to both Databee and Inheed 24/7. It works on battery and doesn't require power supply. It's battery life spans upto 1 year.





## INHEED

Inheed is used to receive data from multiple Combytes (upto 100 No. ) at given instant and place the information in the cloud server. It uses long-range radio-frequency communication system making the communication path between Inheed and Combytes wireless.

It has provision for both Ethernet and Wi-Fi connection allowing the users to choose whichever method they prefer.

## SPECIFICATION

Power Supply Voltage	3.3 V
Input	100-240 VAC, 50-60 Hz
Product Dimension	92 x 68.3 x 57.2mm (LxWxH)
Output	5VDC, 2.5A
Tx Power	27 dBm
Rx Sensitivity	139 dBm
Channel	8 Channel

# FERMSOFT

## ALL IN ONE APPLICATION

FermSoft stands for Fault time Earth Resistance Monitoring software. It is a web application used to gather information from the Fermtalk located at the remote sites, analyze the gathered data and display the result at a central network for control & monitoring purposes.

MEASURE STEP  
AND TOUCH  
VOLTAGE OF  
INDIVIDUAL  
EARTH PITS

FAULT-TIME  
DETECTION  
AND  
MEASUREMENT  
OF EARTH PIT  
RESISTANCE

ALERT  
SYSTEM FOR  
INCONSISTENCY  
IN EARTHING

COMBYTE  
BATTERY  
MONITORING  
SYSTEM



## PCC : PERIPHERAL COMMAND CENTRE

PCC roles are assigned users who are responsible for a group of earth pits . This is the lowest level in the system hierarchy. In this role data from a specific area is analyzed and viewed.

## SCC : SUPERVISORY COMMAND CENTRE

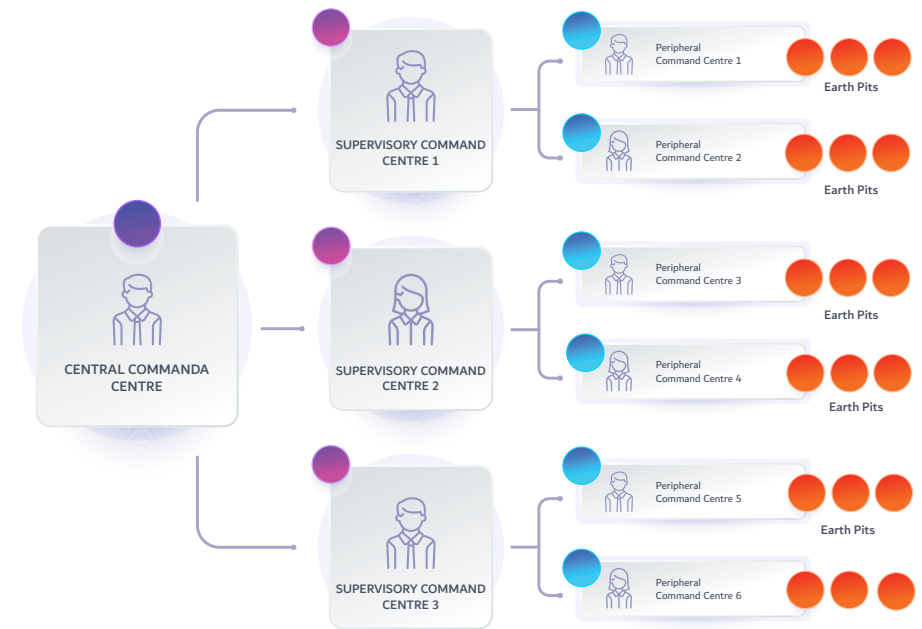
SCC roles are assigned to Area Heads. This is the Mid-level in the system hierarchy. In this role, data from multiple PCC units are analyzed and viewed.

## CCC : CENTRAL COMMAND CENTRE

CCC role is assigned to Plant/Unit Heads. This is the Highest level in the system hierarchy. In this role data from all SCC units are analyzed and viewed.

FermSoft uses role-based platforms to analyze and view data. Each role has a hierarchy and is shown on the left hand side.

Alert System also uses the role-based model to generate and escalate alerts.



## EMAIL

You can drop an e-mail to resolve any hardware or software quires at [FermSofthelpdesk@manavenergy.com](mailto:FermSofthelpdesk@manavenergy.com).

## ON-SITE MAINTENANCE

Circumstances where technical help desk cannot resolve the issue, Manav Energy offers On-Site repair service.

## PICK-UP SERVICE

Circumstances where hardware component/s may needs replacement or off-site repair, we provide door-to-door service.

# SUPPORT

We have dedicated support team to guide and help with any correction or repair. Our post installation support staff can be contacted using any one of the method as mentioned.



## Defence Partners



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