

Remote Monitoring Unit (RMU)



The M.C. Miller Remote monitoring unit is primarily designed to monitor Cathodic Protection Rectifiers and critical Structure-to-soil potential test stations. The Remote monitoring unit can optionally also be enabled to receive commands from a master control centre or an enabled cellular handset to effect control mode changes on the rectifier unit being monitored if it has the capability of automatic control.



The system utilizes cellular infrastructure communications networks and is 2G; 3G ; 4G and NBIoT communications platforms enabled to navigate and monitor corrosion in and around structures under corrosion control utilizing any Cathodic or Anodic Protection rectifiers. Not only is a formal communications channel set up to receive continuous data from the field installed unit but ad hoc communications are permitted from registered field technicians utilizing their cellular devices eliminating unnecessary travel and providing pertinent data so when a field trip is necessary, a diagnostic picture is available prior to departure. Utilizing the optional Cathtect Remote Breaker module and switch gear even tripped circuit breakers can be reset remotely. In both the AC legs of the Rectifier as well as the DC legs. Field status pictures are clear to service and line managers and at the touch of a button on their standard windows enabled workstation. Saving you time, saving you money, keeping you first!

Travel can now truly be limited to repair and maintenance without nuisance return trips because the technician not carrying requisite fuse or did not know which component had failed.

Every company or individual has the capacity by virtue of an internet presence to be able to economically incorporate the Remote monitoring system. There is no need to have specialised servers and end users are now able to utilize existing infrastructure to gain access to remote monitoring economically and effectively without specialised IT buffering or handling charges. Simple, efficient and cost efficient.

The M.C. Miller Remote monitoring unit is able alert a supervisor when any of the parameters being monitored enter into an alarm state, all monitored functions when entering into alarm state, will advise the cellular number programmed into the field RMU unit as well as advise the standard logging protocol (user control centre)

- Output Voltage
- Output Current (up to two available 50mV inputs standard, form factor calibration to 650A)
- Structure to Reference Electrode Potential (up to 3 available high input impedance inputs)
- AC Power status
- AC Circuit breaker or Fuse status
- DC Circuit breaker or Fuse Status
- Ambient Temperature
- Rectifier stack / power supply/ Switch mode Temperature.
- Door Tamper
- Spare function (available to be determined by user)
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The M.C. Miller Remote monitoring unit simplifies Cathodic Protection monitoring permits the review of historical as well as evolving logs and alarms from a centralised data base or on the users own web portal, no 3rd party servers so the system allows the user to be in control of all their data all of the time. Multiple averaging methods are user programmable for organising automatic logging of data.

In build GPS engine and receiver provide constant time keeping and also provide data for technicians to locate equipment even when staff rotations call for technicians to absorb new routes as work colleagues go on leave or are ill. Monitoring of the Cellular signal quality is incorporated into all the remote monitoring units helping with fault finding and ensuring high up times and reliability.

Exporting raw data from the data base is simple and can be done at the touch of a button into csv format without interfering with the logging process or altering the data base.

Features:

Power Supply/UPS

Power Supply wide spectrum 90-264V Input AC supply

Standby Battery trickle charging 10mA 12Vsla Battery/ Lion optional

Alarms on Power fail and CB trip

Communications

2G;3G;4G; LTE Cat-m & NBiot enabled

GPS

Inputs

6 Analogue inputs

3 off >1gig Ohm input impedance (Great for monitoring Tank Bottoms)

8 Digital Inputs

Analogue Battery voltage monitor

2 50mV monitoring inputs

Cellular signal

GPS Location

Control mode

Averaging method

Control set point (Auto Rectifiers)

Shunt scaling factor setting

2 Temperature inputs

Outputs

4 Potential free Change over contacts

2 optional Circuit breaker resetting outputs.

0-5vDC control output

Functional Description

Continuously monitors connected outputs of Cathodic Protection rectifier

Collates data and transmits data every hour to central data base in either standard average or moving average.
(User programmable)

Detects alarm condition on any inputs and sends alarm notification to central data base and to supervisor via SMS, MQTT packet or email.

Analogue Inputs Hi & Low Alarm

Digital Inputs on activation

Can respond to ad hoc requests from mobile devices for spot data.

Master station requirements

Internet connection

FTP site or MQTT app

Windows enabled workstation

Master station functional description

Receive transmitted data from field remote monitoring units automatically.

Stores received data into a Sequel Data Base.

Permit ad hoc date stamped searches of the data base

Displays data base information in a useable fashion (Human Machine interface)

Permit export of stored data in comma separates variable format.

Provide basic graphing of search data

Provide easy identification of fault conditions

Data Base & Reporting

Data can be captured according to customer needs and save onto Data Base system.

Remote monitoring set up can be client specific.

The remote monitoring system can transfer Data to a specified server where the data can be accessed, alarms raised, rectifiers history checked as well as review CP System Performance and uptime.

Optional automated Monthly/Weekly report generation or Software to be further engaged according to customer requirements.