

## Earth and Cable Monitor (ECM)

### FEATURES

- Continuous monitoring of earth bond integrity
- Connects to 110 or 220V single phase AC supply
- Earth fault current is calculated from the measurement of the 50 Hz component from the special current transformer
- trip times and levels are settable by DIP switches
- LED indication for high-resistance trip and high earth-fault condition, also when power is off



### OPERATION

A burst of a small high-frequency current is applied to the local earth bond via a special current transformer. During this burst the resulting voltage drop is measured and interpreted as a resistance in Ohms and compared to a limit.

The resistance is that of the circuit in which the wire is located.

This burst is applied at about 1Hz.

When a preset resistance limit is exceeded a relay output is activated after a settable delay for a preset duration with a default of 1.2 sec.

When any of the red LED's is flashing it will continue for approximately 5 seconds after a good earth bond and low earth-fault current has been restored.

- Solid Green LED = Power on and Relay healthy
- Green blinking LED = System fault
- Solid Blue LED = GSM module is on-line
- Yellow LED = battery is being charged
- Red blinking (red LED 1) = faulty earth wire trip
- Red blinking (red LED 2) = Earth fault current trip

### Supply:

64 - 264V ac, single-phase 50 Hz burden: approx. 3VA

### Excitation:

An AC current burst for about 100 msec. every second

### Resistance measurement:

Range: 0.1 – 5 Ohms

Default trip setting: 1 Ohm

### Earth-fault current measurement:

Range: 1 - 20A, default trip setting = 5A

Measurement resolution: 300mA

Trip delay default setting: 5 sec

### Trip output:

1 x change-over relay contact, sealed

Nominal switching voltage: max. 250V ac, 50 - 60 Hz

Current rating: 1A at 30V dc or 125V ac

Max. switching voltage 220V ac

### Trip indication:

Red flashing LED, working up to 3 days when power is off

External rechargeable battery:  
built-in charger is for 12V sealed lead-acid  
Max. charging current: 1A

Operating temperature range:  
-5 to +70degC, Storage temperature range: -40 to +85degC

controller enclosure:  
106 x 87 x 58, DIN rail mountable

Optional SCADA communication module:  
Product-specific data is available on request

Connection example with rechargeable battery:

