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RINGLINE EARTH LEAKAGE ANALOG TRANSMITTER

P/N – RLTXERTH

Ex ia – IECEx TSA 08.0031X

RINGLINE EARTH LEAKAGE ANALOG TRANSMITTER

DESCRIPTION:

The Ringline earth leakage transmitter is encapsulated in a foot mounted plastic housing with flying leads for circuit connection. It is designed to continuously monitor any earth leakage from the Ringline field bus. The transmitter provides two 10 bit transmissions, which are proportional to any leakage between the Ringline Signal (Signal to earth) and Common (Common to earth) wires and earth. Each signal only uses a single channel out of a possible 128 or 192. The channel addresses of each signal are stored in an onboard EEPROM.

Each transmitter has a pair of wires (blue & white) to connect it to the Ringline field bus and a single wire (green with yellow stripe) to terminate to earth. There is an additional wire (green) to facilitate the programmable addressing process.

The transmitter receives operating power from the Ringline field bus and at the same time encodes the status of earth leakage back onto the bus.

FEATURES:

- **Simple**, **robust** and **functional**.
- Ultra low power consumption.
- Signals retrieved using The Ringline Modbus Interface, Analog 4 to 20mA Receivers or Ringline Displays.
- Up to 12kMs of condition monitoring on ‘two wires’.
- Leakage values may be continuously trended to monitor isolation conditions of field bus.
- Addresses may be selected at order time, or reprogrammed with a Ringline Programmer.
- Inbuilt lightning protection.

APPLICATIONS:

The transmitter identifies earth leakage caused by water and/or dust in switches and junction boxes, or damaged cables. Although Ringline can tolerate a single earth on the system, multiple earths can cause partial shorts on the two-wire that can cause the system to fail to safety. This transmitter negates the need to manually check for earths with a meter as part of a regular maintenance program. Partial earths may be identified and cleared during normal maintenance before the problem can cause a shutdown.
Internally the transmitter performs a similar function to a moving coil meter with a100k ohm impedance.

BRIEF TECHNICAL SPECIFICATIONS:

Power Supply:	Powered from Ringline field bus
Power Consumption:	Peak 2.6mA Ave 1.6mA
Isolation Earth To Ringline:	Solid state relay at 300 volts
Input Range:	1 Meg ohm to dead short measured to earth connection
Resolution:	2 signals - 10 bit each - 0 to 1023 decimal
Analog Update Rate Ringline 128:	1.64 seconds
Analog Update Rate Ringline 192:	2.408 seconds
Sig/Com to Earth Measurement Rate:	12 x Analog Update Rate
Ringline Address Programming:	Addr1 = value of resistance 'com' to earth
	Addr2 = value of resistance 'sig' to earth
Dimensions:	75 (w tabs) / 55 (w body) x 40(h) x 27(d) mm
	Ø3mm mounting holes - 65mm apart

Readings : **< 100 = > 1meg ohm** **-** system operating within tolerances

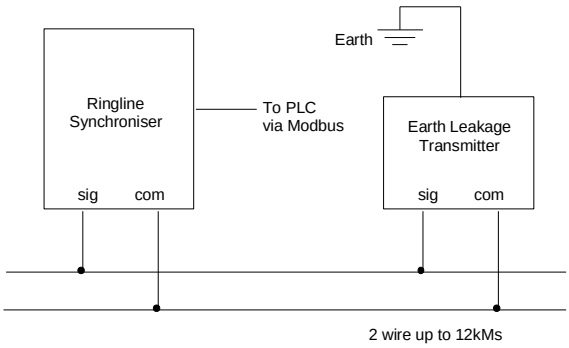
500 = 100k ohm - partial earth detected, scheduled maintenance recommended

> 900 = <10k ohm - earth detected, maintenance is required before a combination of earths could lead to downtime.

For SCADA and other data retrieval systems, the formula below enables the calculation of an approximate resistance-to-earth based on the raw value from the transmitter:

100 x (1023-value)/value = resistance in kΩ

Operating Temperature Range: -30 → +75 ºC



Typical usage drawing