**RFL 9512**

**Line Tuning Unit**

The RFL 9512 Line Tuner matches the impedance of the Power Line Carrier (PLC) terminal to the high voltage power line in order to reduce the insertion loss of the transmission of PLC signals over the power line. In addition, isolation from the power frequency voltage and transient overvoltage protection is provided.

**Description**

The RFL 9512 Line Tuner can be used with PLC communications systems connected to coupling capacitors having a capacitance between 2,000 to 10,000pF.

- Conforms to the requirements of IEC 60481.
- Peak envelope power (PEP) rating is 400 Watts.

**Key Features & Benefits**

- Available in either High Pass or Band Pass filter configurations.
- The RFL 9512 is used for phase-to-ground coupling. Phase-to-phase versions are also available.
- All weather enclosure with stainless steel hardware.
Operating Principle
The high-pass or band-pass circuit consists of a drain coil, inductors, and capacitors. A matching transformer provides potential insulation between line side and equipment (cable) side, and provides the means to make the power line impedance match that of the PLC terminal. The power frequency current derived from the coupling capacitor is drained to ground by the optional drain coil. Limitation of voltage surges coming from the power line at the HV terminal of the tuner is performed by a lightning arrester connected in parallel with the drain coil. The line tuner will be short-circuited to ground when the grounding switch is closed.

System Schematic

Shown with optional differential transformer for Phase to Phase coupling.
**Technical Specifications**

- **Frequency Range**: 40 – 500 kHz
- **Coupling Capacitor**: 2,000 to 10,000pF
- **Nominal Power (PEP)**: 400W for two tones
- **Impedance (Equipment Side)**: 50 and 75Ω
- **Line-side nominal impedance**: 100 to 600Ω selected by tap connection
- **Resonant circuit**: Available as:
  - Third-order high-pass filter
  - Second-order band pass filter
- **Power Frequency Insulation**: >10kVrms
- **Impulse voltage insulation**: >5kVrms
- **Line side**: drain coil (optional), earthing switch, air-gap surge arrestor and a solid state surge arrestor.
- **Equipment side**: gas surge arrester

**Operating Conditions**

**Mechanical Characteristics**

- **Dimensions**: Height: 15.75” (400mm); Width: 11.81” (300mm); Depth: 7.87” (200mm)
- **Weight**: 25lbs (11.5kg)
- **Mounting**: (4) 5/16” (8.5mm) holes
- **Connection to line PLC equipment**: By means of cable glands type PG-21, suitable for cables between .354”-.71” (9mm to 18mm)
- **Grounding**: Ground stud, Size M10
- **Ventilation**: Orifice with DR type device
- **IP protection level**: IP66 according to IEC 60529 (UNE 20324, EN 60529)

**Ordering Information**

- **RFL9512**

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-20°C to +60°C and relative humidity not greater than 100%

November 2009