



COUPLING DEVICE

The 650 W Coupling Device comprising of coupling filters and protective devices is used to couple the PLCC terminals onto the high voltage transmission line. The device is purely passive and is inserted between the low voltage terminal of the coupling capacitor and the co-axial connection to the carrier terminal. The coupling filter, together with the coupling capacitor forms T section band pass filter with multi band selections.

The following elements are the part of coupling device mounted inside marshalling boxes:

Balancing transformer: It improves better phase splitting and couples the output of the PLCC terminals to the coupling filters. Meanwhile it ensures the carrier signals are in healthy condition even under the failure of any one of the coupled phases and voltage isolation.

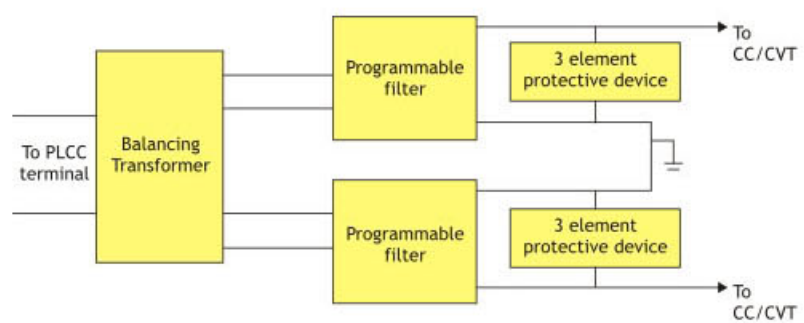
Matching transformer: This performs the function of impedance matching and high voltage isolation between carrier equipments and line side.

Coupling filter: The coupling filter together with the external coupling capacitor, forms a 'T' Section band pass filter. Different frequency bands are achieved depending upon the value of coupling capacitor and it ensures the optimum tuning of available capacitance of the coupling capacitor.

Drain coil: the function of the drain coil is to offer low impedance at power frequency and high impedance at carrier frequency. This is essentially a safety element.

Lightning arrester: A Non-linear resistor type lightning arrester is connected between the primary and the earth terminals for protecting the coupling device and the carrier frequency connection against any high spike voltages.

Earth switch: This ensures a temporary direct earthing of the coupling capacitor during maintenance or commissioning. The earth switch is suitably mounted outside the marshalling box.



Block diagram of 650Watts phase to phase coupling device

Technical specifications

I.650 W LMU

Pass bands	: (35-50)/(50-90)/(90-500) kHz
Coupling capacitor	: 2200/4400/6600/8800 pf (Programmable)
Return loss	: <2dB
Return loss	: > 12dB
Equipment side Impedance	: 75/125/150 Ohms
Line side Impedance	: 600 Ohms (Ph-Ph) / 400 Ohms (Ph- Gnd)
Peak Envelope Power	: 650 watts
Isolation between primary & secondary	: 5kV rms

Power frequency test voltage	: 5 kV AC rms for 1 Min
Balancing transformer	: 5 kV AC rms for 1 Min
Matching transformer	: 5 kV AC rms for 1 Min
Impulse withstand level	: 10kV peak

II.DRAIN COIL

Rated inductance	: 50 mH
Continuous rating	: 1 Amps
Short time current rating	: 50 Amps for 0.2 seconds.

III. EARTH SWITCH

Insulation withstand voltage	: 10kV AC
Rated current	: 400 Amps

IV. LIGHTNING ARRESTOR

Rated voltage	: 0.8 kV
Power frequency spark over voltage	: >1.2kV
Nominal discharge current	: 5kA

FEATURES

- Programmable pass bands.
- Coupling Capacitor values programmable
- Equipment side impedance programmable
- Equipped with three element protection devices (Drain Coil, Earth Switch & Lightning arrester)
- Designed for outdoor usage and can be conveniently mounted on the CVT tower.
- The equipments meet IP-55 specifications.



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