Farapayam Engineering Co.

Line trap

PLC Transmission System

line traps are designed to prevent the carrier frequency signals from traveling in undesired directions of the frequency bands. They are connected in series with high - voltage lines of substations and of the feeder locations; they must be designed to withstand they maximum continuos current as well as any short circuit current that may occur at the location.

Line traps provide defined impedance and attenuation regardless at the circuit state of the high-voltage network.

Line trap / 1mH / 2000 A / 50 KA

KEMA - high power lab.

APPLICATION

► High voltage lines are used to transmit various signals such as telemetry signals, remote control signals, telephone calls, telex messages, etc. In this connection,

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Transducer

Iron Core Reactor

Air Core Reactor

L.M.U

ADVANTAGES OF THE FARAPAYAM DESIGN

- Exceptional short circuit withstand ability for greater operational reliability
- Negligible inductivity tolerance
- Low capacitance of the main coil
- Higher Q
- Smaller volume
- Open struture permits excellent cooling of the live conductor
- Lower mass
- No maintenance required

Graph for determination of band limit frequencies

f1R and f1R with a minimum resistive impedance Rb = 600Ω (other impedance values are possible, smaller values result in broader bandwidth and vice versa)

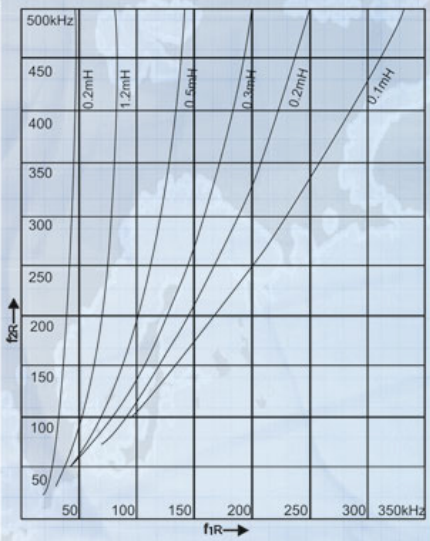
Example :

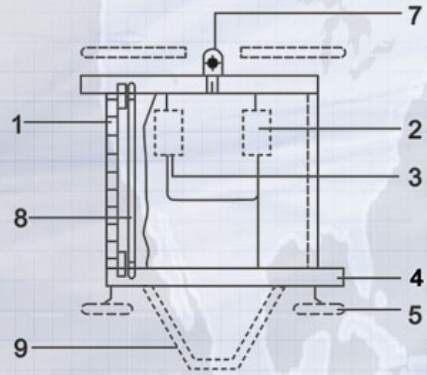
f1R = 116 KHZ ,f2R = 272 KHZ for

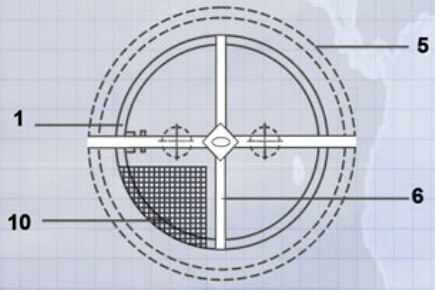
f1R= Lower bandlimit frequency

f2R= Upper bandlimit frequency

LtN= 0.5 mH







1 = Mian coil
2 = Tuning device
3 = Protective device
4 = Terminals
5 = Corona guard ring (optional)
6 = Spider
7 = Lifting eye
8 = Tie bars
9 = Support for pedestal mounting
10 = Bird barrier (optional)

TESTS

All type tests recommended by the IEC-353 are carried out in the KEMA, CESI & VVA laboratory Basically all routin Test are carried out on every FARAPAYAM line trap.

Circuit diagram and blocking characteristics of a band tuned line trap

LtN = Main inductance, measured at 100KHZ

C1,C2,Rd,L2 = Tuning elements

|Zb|/Rd = Normalized impedance characteristics

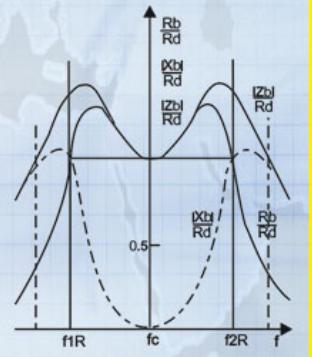
Rb/Rd = Normalized characteristics of resistive components

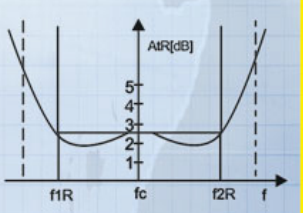
|Xb|/Rd = Normalized characteristics of resistive components

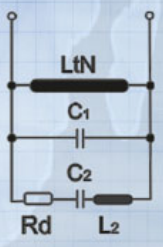
At R = Tapping loss based on blocking resistance

f 1R ,f 2R = Cut - off frequencies

fc = Center frequency







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