TESTING INTER-WINDING CAPACITANCE

INTER-WINDING CAPACITANCE ($C_{W/W}$):

The inter-winding capacitance is measured by shorting the primary and secondary windings to themselves and connecting them to the inputs of an appropriate bridge. Care must be taken to account for the fixture and lead capacitances.
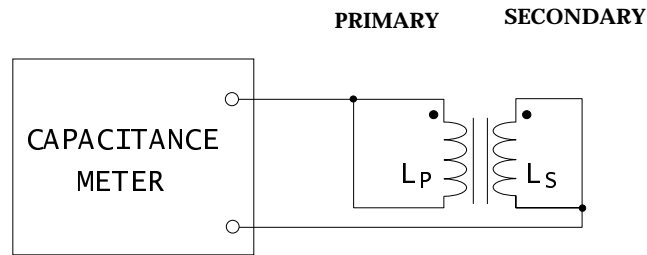

Figure 3: Circuit for the measurement of inter-winding capacitance ($C_{W/W}$)

DISTRIBUTED CAPACITANCE (C_P and C_S):

DISTRIBUTED CAPACITANCE (C_P and C_S):

One of the accepted methods for measuring the effective distributed capacitance that shunts a transformer winding is by determining the self-resonant frequency (F_R) of the the winding. The effective distributed capacitance can then be calculated by using the value of the measured winding inductance (L_M):

$$C_D = 1 / \{(2\pi F_R)^2 \times L_M\}$$

This method will remove the effects of terminal and fixture capacitances on the measurement. There will be some error in C_D if L_M is sensitive to the frequency or amplitudes used.

The resonant frequency (F_R) of the winding can be found by using a suitable Q meter. For measurement correlations it is imperative that the following be specified:
1) The equipment to be used to measure F_R and L_M
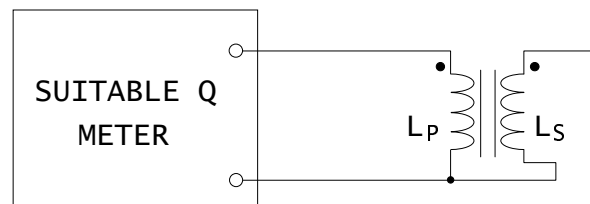2) The exact lead connections to be made.

Figure 4: Circuit for the measurement of distributed capacitance (C_D).