Lecture 49

1. **Two wattmeters are connected to measure the power input to a 3 phase circuit indicate 8kW and 0.8kW ,the later reading being obtained after reversing the voltage coil connection. Find power factor of the load . Also find total active and reactive powers**

Solution :

Data Given $W_1 = 8\,KW$

$W_2 = -0.8\,KW$

Active power $P = W_1 + W_2$

$= 8 - 0.8$

$= 7.2\,KW$

$$\tan\phi = \sqrt{3}\left(\frac{W_1 - W_2}{W_1 + W_2}\right)$$

$$= \frac{\sqrt{3}\,(8.8\,KW)}{7.2\,KW}$$

$\tan\phi = 2.11$

$\tan\phi = Q/P$

Reactive power $Q = 15.24\,KVAR$.