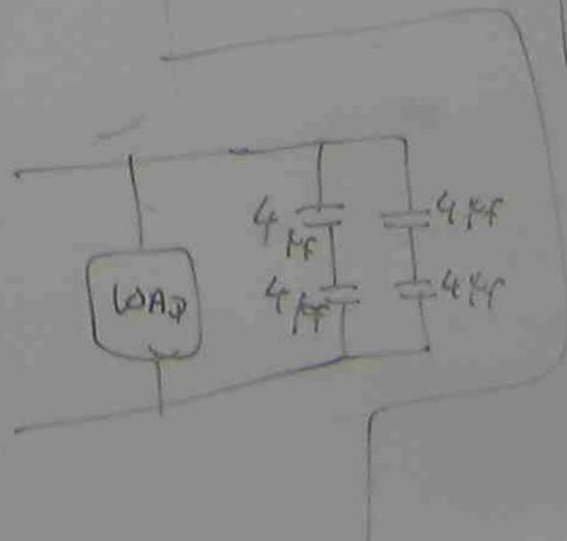
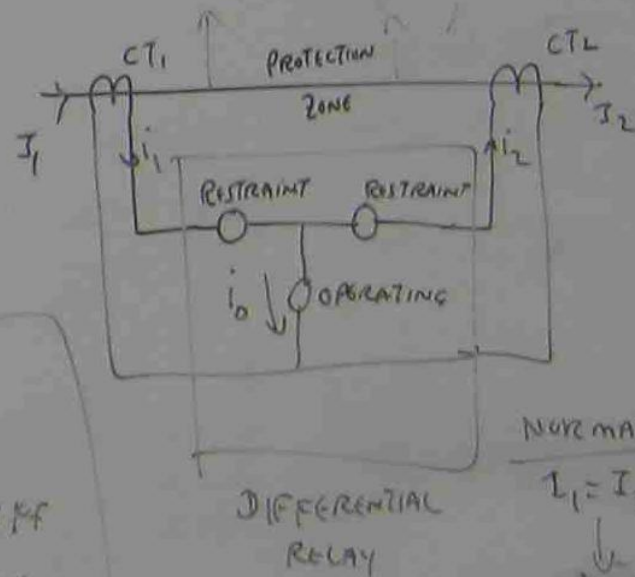
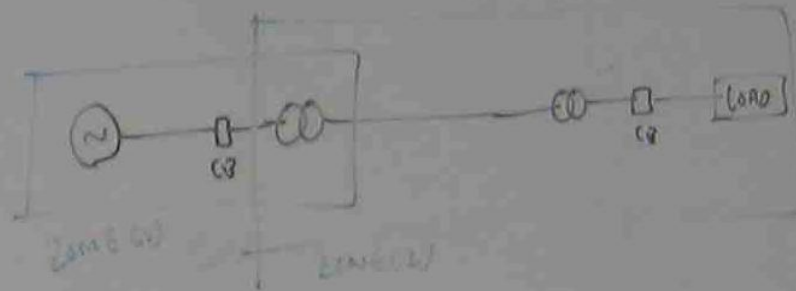


# TRANSMISSION LINE PROTECTION



NORMAL

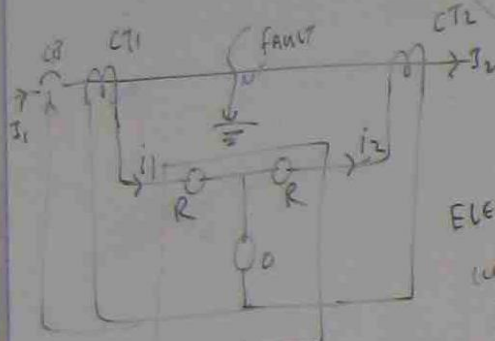
$$I_1 = I_2$$

$$\downarrow$$

$$i_1 = i_2$$

$$i_0 = 0$$

NO RELAY OPERATION



BALANCED  
CURRENT  
PRINCIPLE

ELECTRICALLY  
COUPLED BETWEEN  
 $i_1$  &  $i_2$

$$I_1 \approx I_2$$

$$i_1 \approx i_2$$

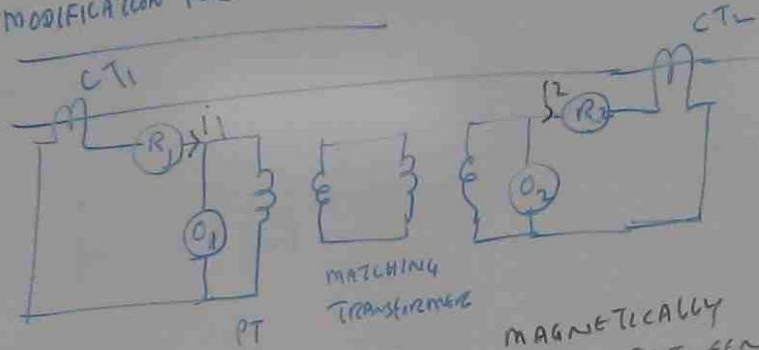
$i_0$  FLOWS INTO OPERATING COIL

RELAY OPERATE

IF THERE ARE FLOWING OUT OF CURRENTS  
ALONG THE LINE, DIFFERENTIAL PROTECTION  
CAN NOT BE USED.

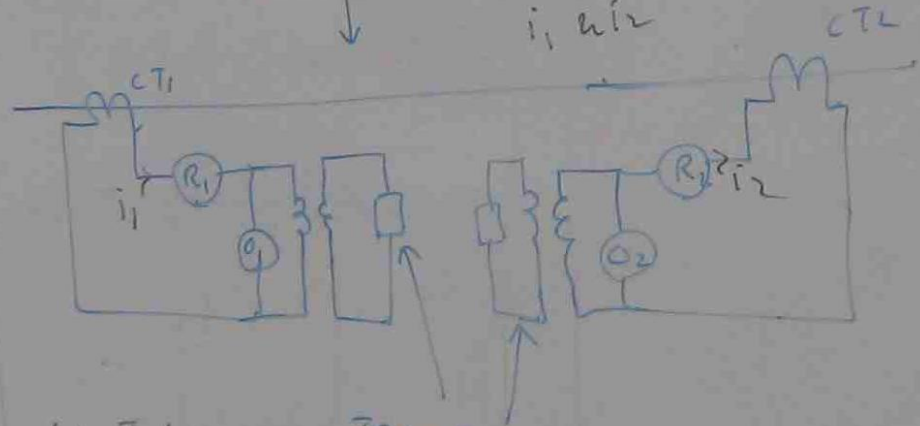
DISTANCE RELAY PROTECTION MUST BE USED.

### MODIFICATION FOR LONG LINE



MATCHING  
TRANSFORMER

MAGNETICALLY  
COUPLED BETWEEN  
 $i_1$  &  $i_2$



USE TELECOMM.  
SYSTEM TO  
COUPLE  $i_1$  &  $i_2$

TRANSDUCER  
+  
TRANSMITTER  
+  
RECEIVER

TELECOMMUNICATION SYSTEM IS INTEGRATED IN POWER SYSTEM  
TO USE DIFFERENTIAL RELAY FOR LONG LINE PROTECTION

BALANCED VOLTAGE PRINCIPLE

