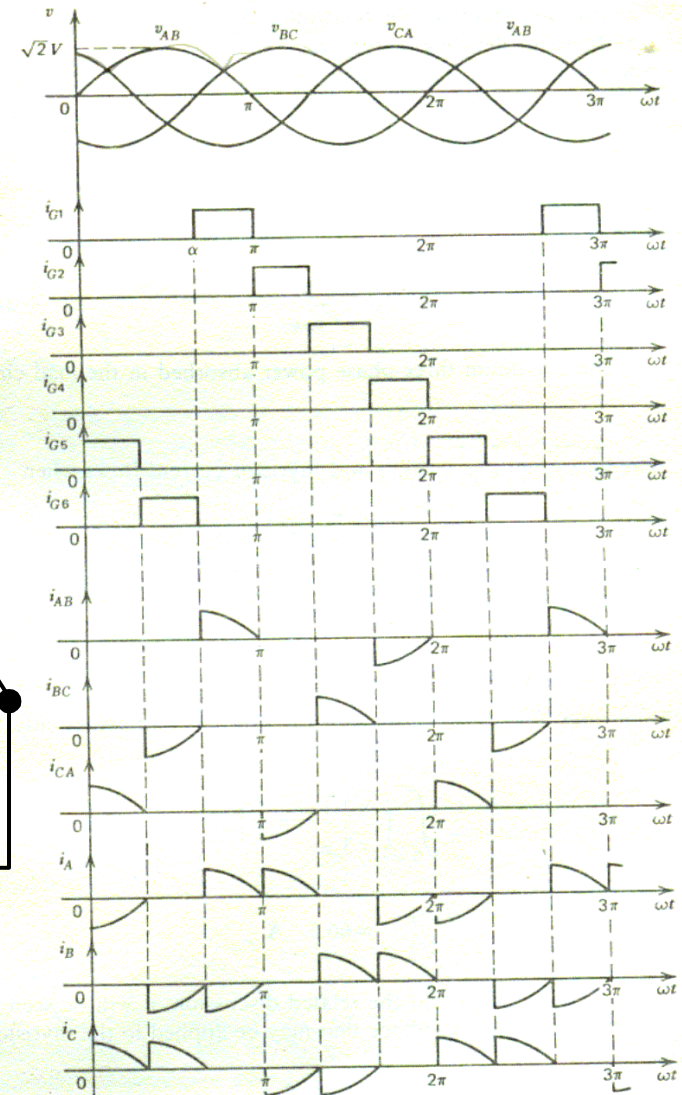
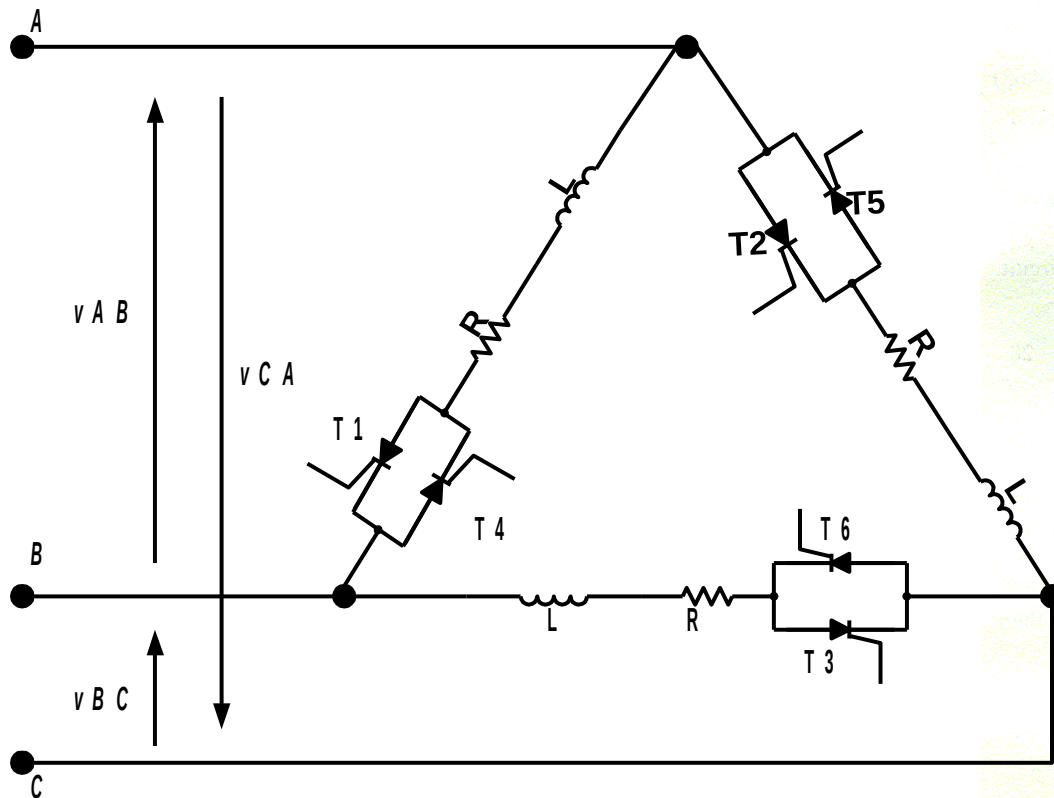


# **CONTROLADORES DE TENSÃO CA TRIFÁSICOS**

**Prof. Azauri A. de Oliveira Jr**

# CONTROLADORES DE TENSÃO CA TRIFÁSICOS

## CONTROLADORES EM DELTA

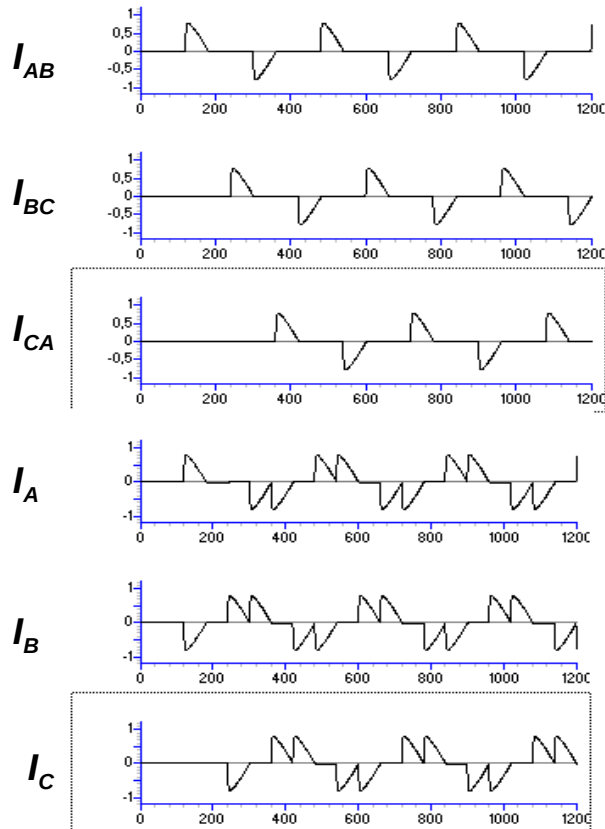


# CONTROLADORES EM DELTA - CARGA R

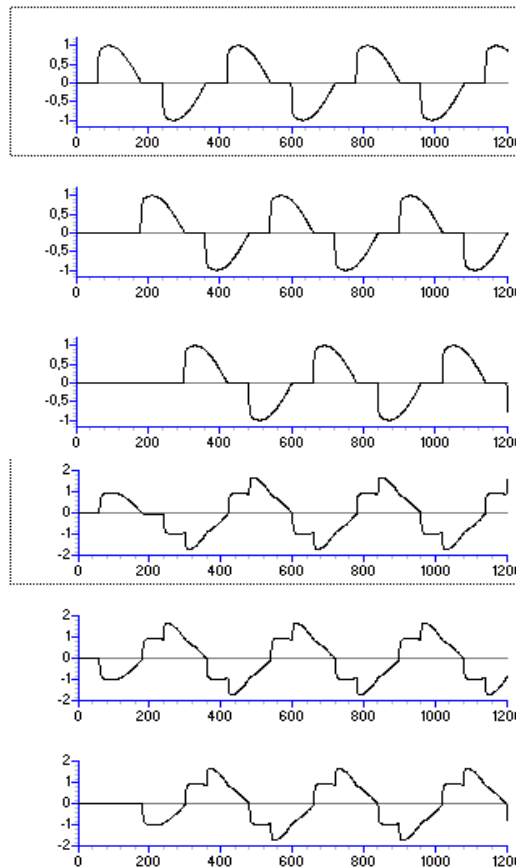
## FORMAS DE ONDA DAS CORRENTES

$$\alpha = 120^\circ$$

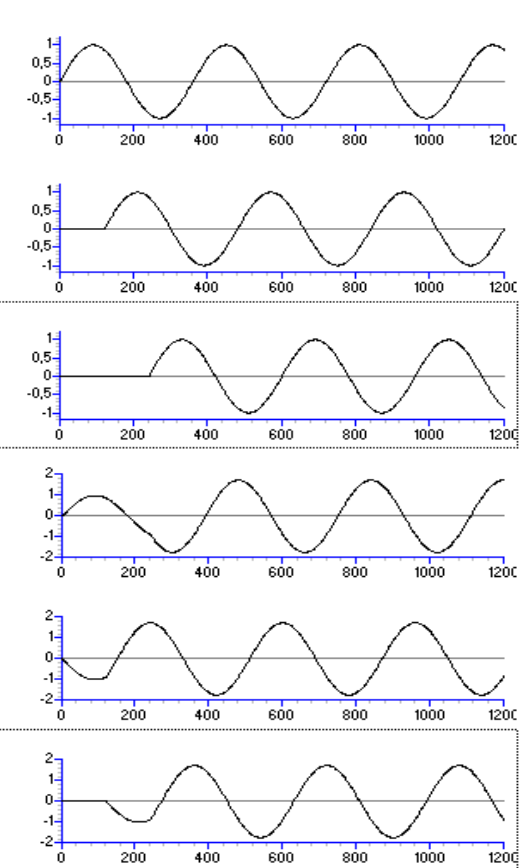
0



$$\alpha = 60^\circ$$



$$\alpha = 0^\circ$$

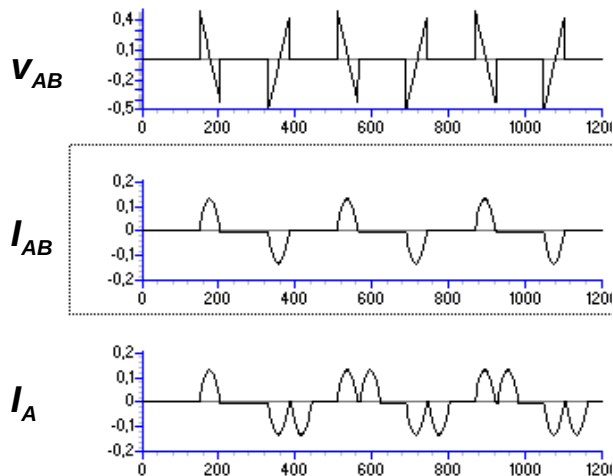


# CONTROLADORES EM DELTA - CARGA RL

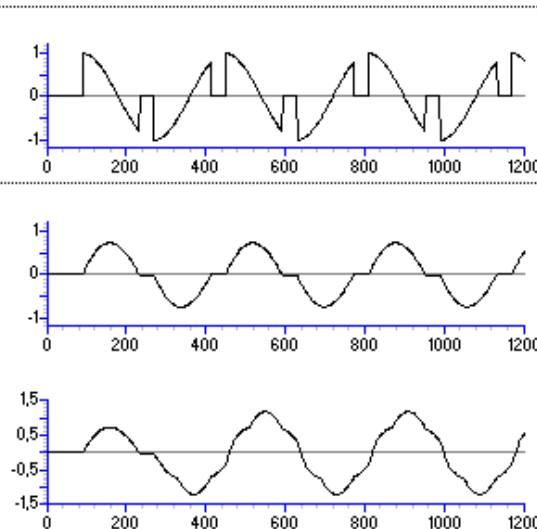
## FORMAS DE ONDA DE TENSÃO E CORRENTE

**ÂNGULO DA IMPEDÂNCIA  $\varphi = 60^\circ$**

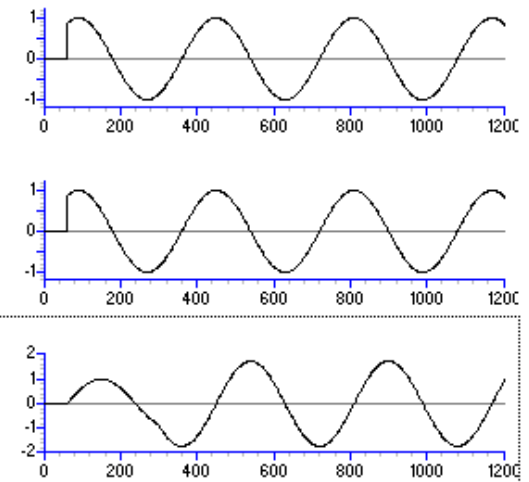
$\alpha = 150^\circ$



$\alpha = 90^\circ$

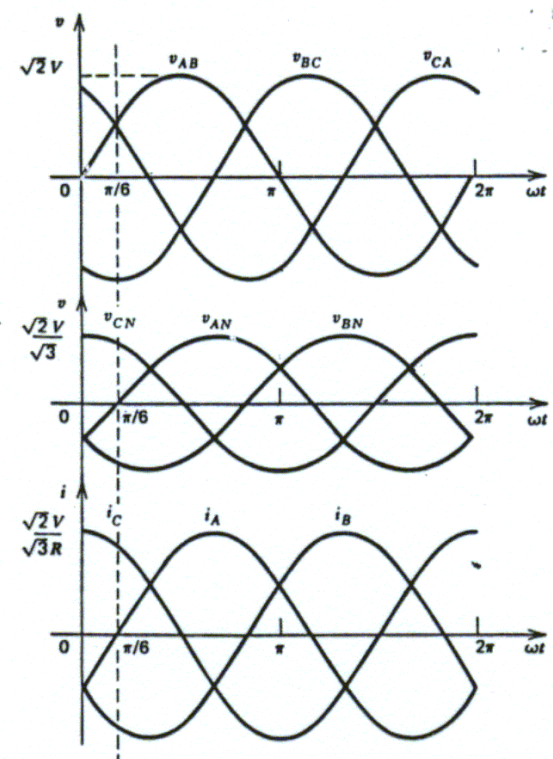
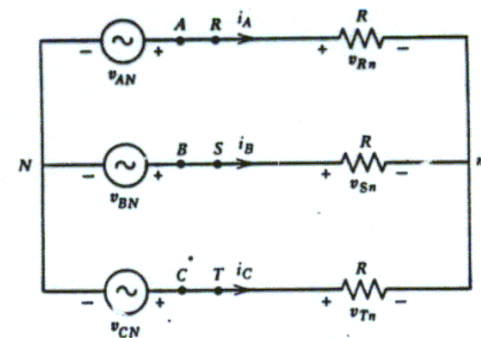
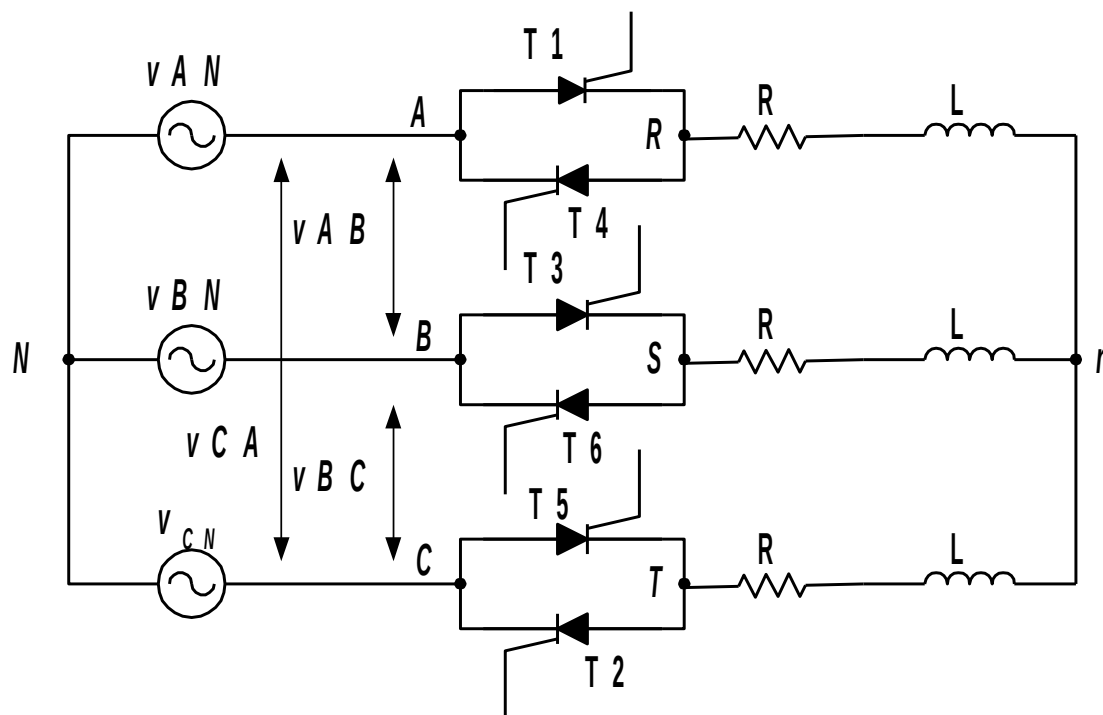


$\alpha = 60^\circ$

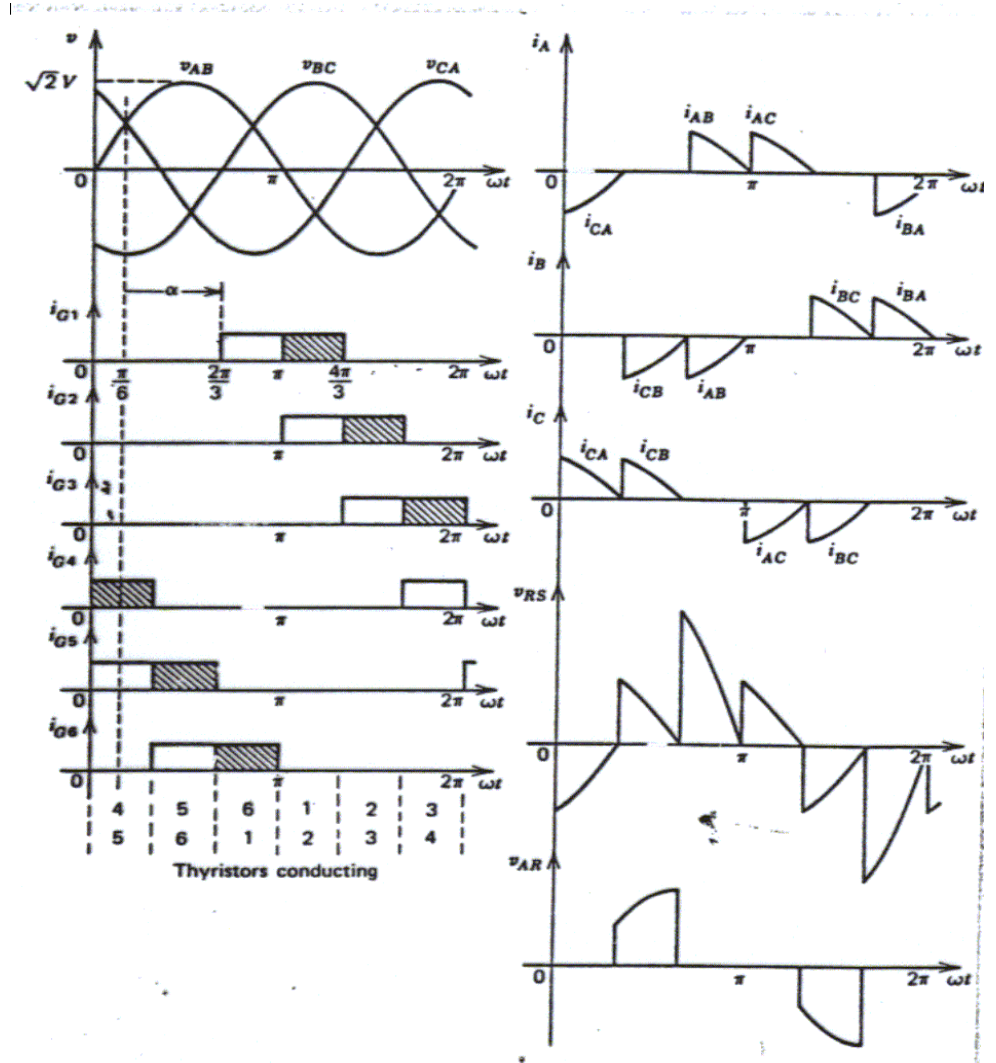
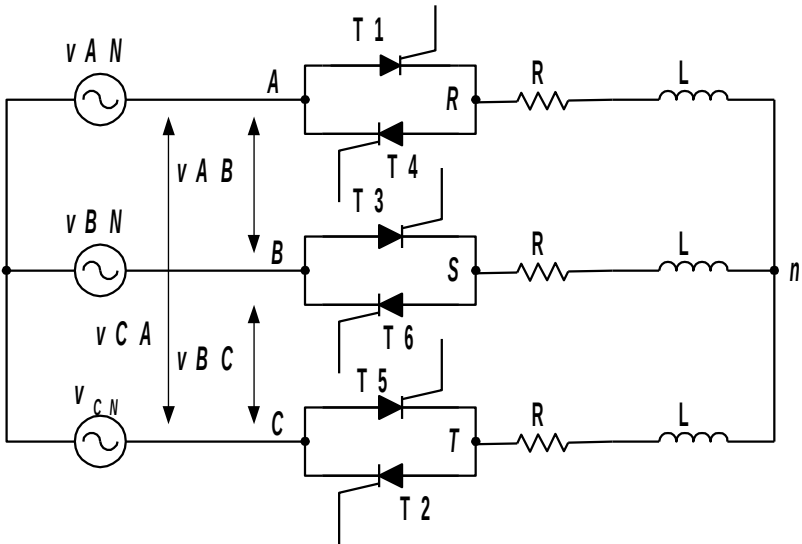


# CONTROLADORES DE TENSÃO CA TRIFÁSICOS

## CONTROLADORES EM ESTRELA (Y)

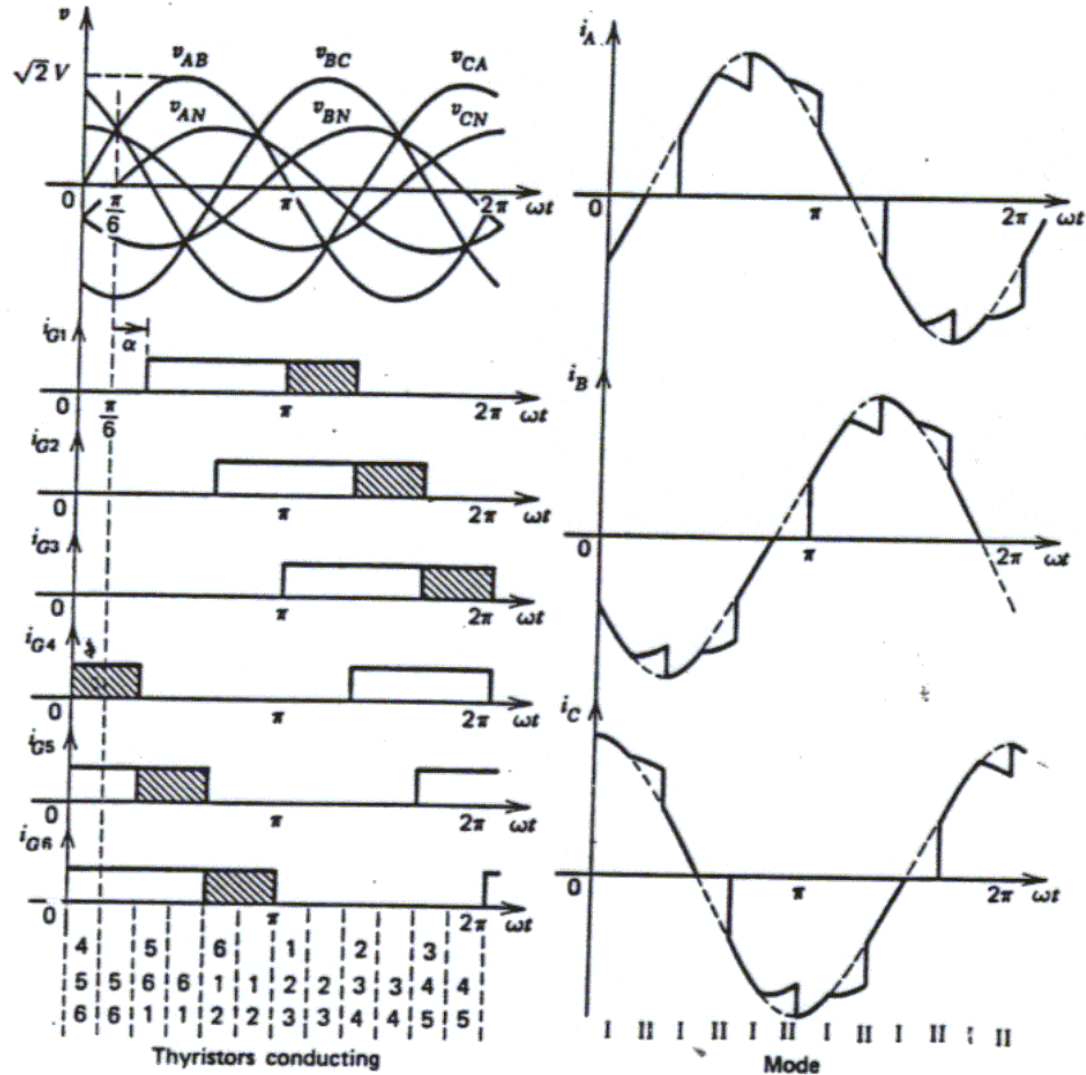
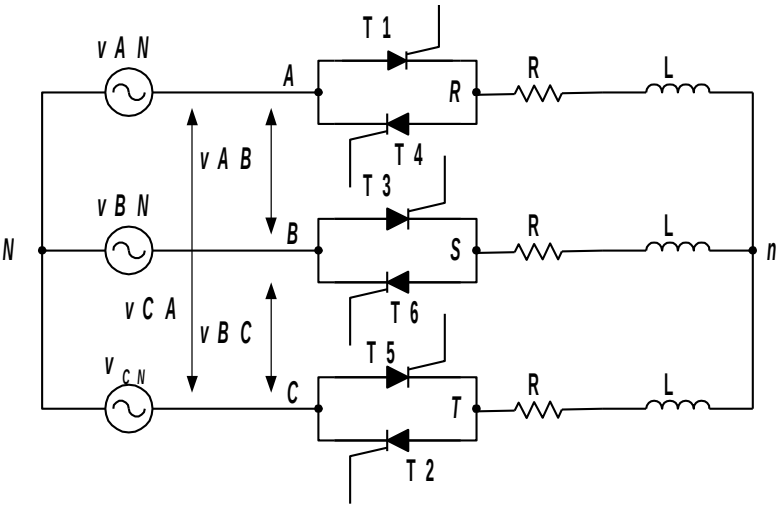


## CONTROLADORES EM ESTRELA (Y) CARGA RESISTIVA ( $\alpha = 90^\circ$ )



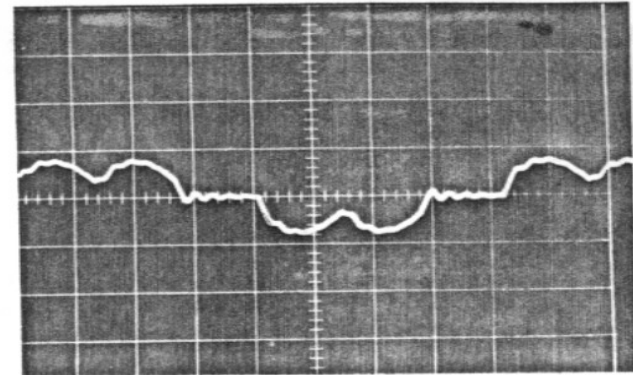
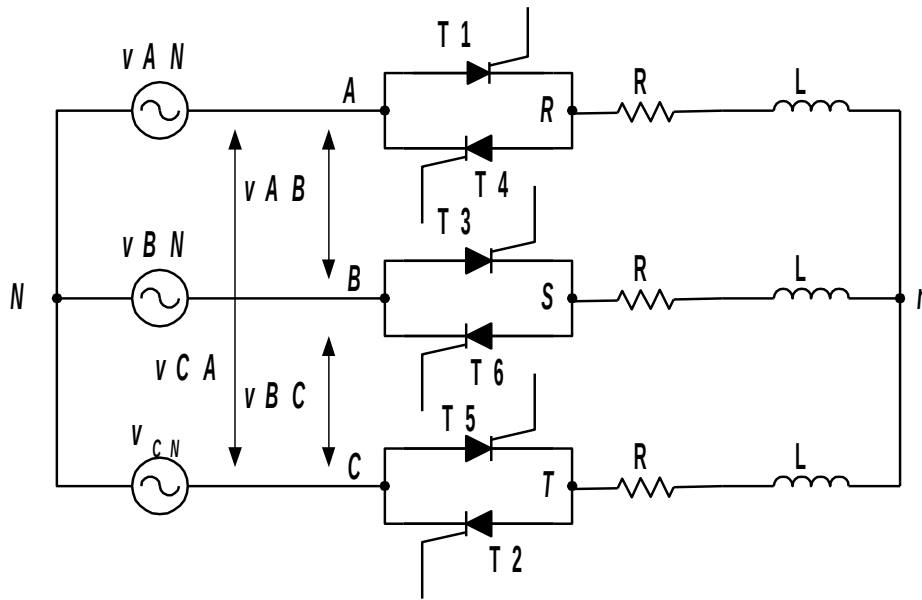
# CONTROLADORES EM ESTRELA (Y)

## CARGA RESISTIVA ( $\alpha = 30^\circ$ )

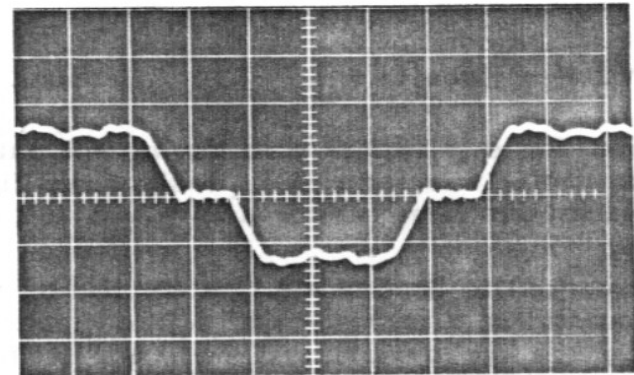


# CONTROLADORES EM ESTRELA (Y)

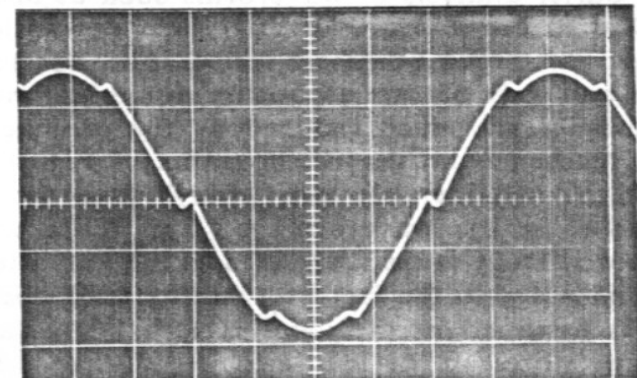
## CARGA INDUTIVA



(a)  $\alpha = 135^\circ$



(b)  $\alpha = 120^\circ$

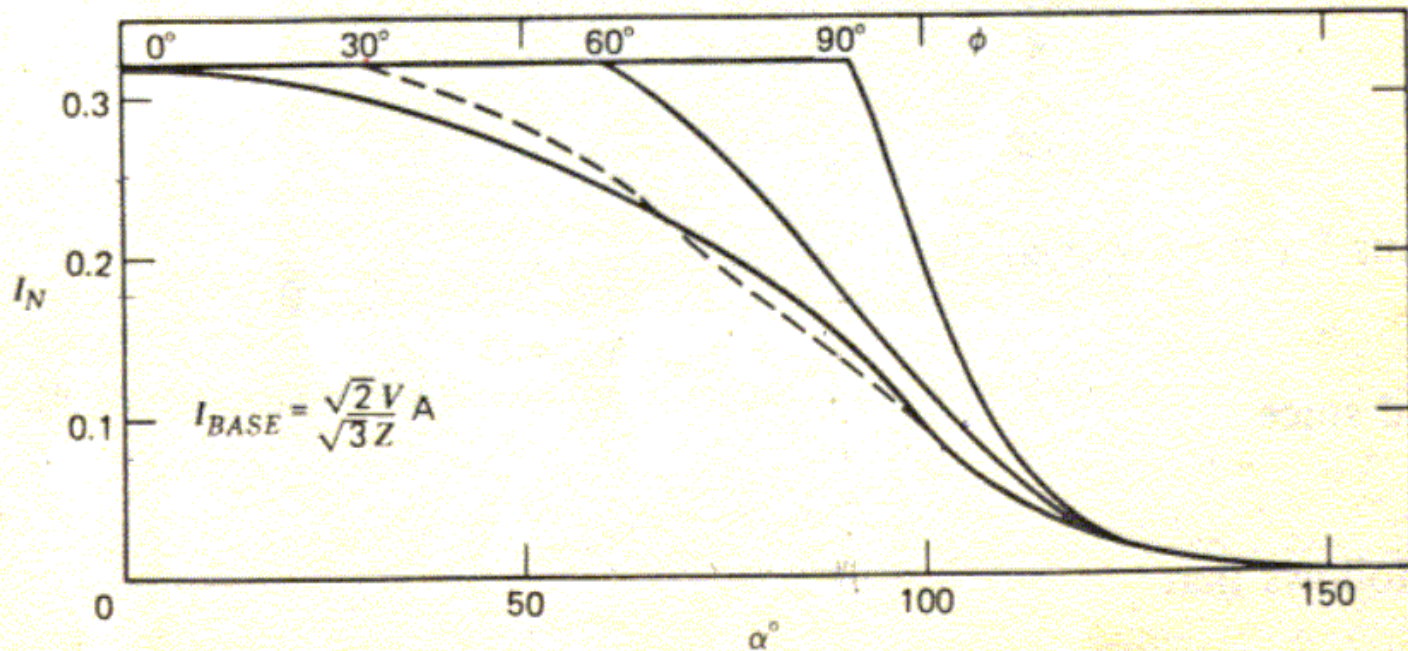


(c)  $\alpha = 90^\circ$



# CONTROLADORES EM ESTRELA (Y)

## Corrente Média Normalizada por Tiristor – Carga RL



# CONTROLADORES EM ESTRELA (Y)

## Corrente Média Normalizada por Tiristor – Carga RL

