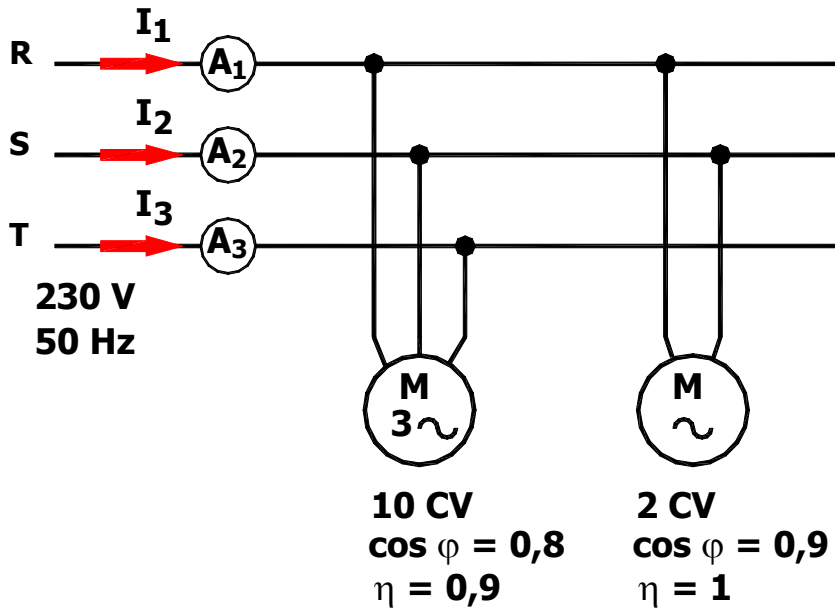
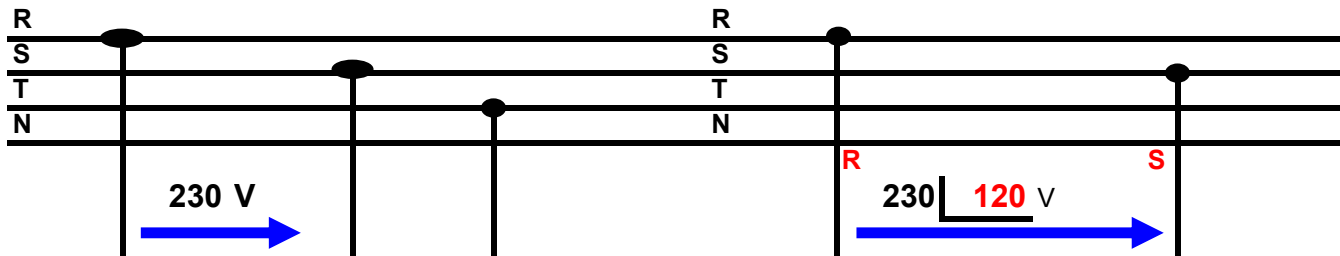


**Ejercicio 1: Calcular la lectura de los tres amperímetros:**



**Solución:**

$U_L = 230 \text{ V}$



|                        |           |
|------------------------|-----------|
| $P = 8177,8 \text{ W}$ | $CV = 10$ |
| $fdp = 0,8$            | $h = 0,9$ |
| $U_L = 230 \text{ V}$  |           |

|                          |                         |
|--------------------------|-------------------------|
| $P = 8177,8 \text{ W}$   | $j = 0,644 \text{ rad}$ |
| $Q = 6133,3 \text{ Var}$ | $j = 36,87^\circ$       |
| $S = 10222 \text{ VA}$   | $IL = 25,66 \text{ A}$  |

Estrella equivalente

|                                    |                              |
|------------------------------------|------------------------------|
| $U_F = 132,79 \text{ V}$           | $IF = 25,66 \text{ A}$       |
| $Z_E = 5,175 \angle 36,8699^\circ$ | $= 4,14 + j 3,105 \text{ j}$ |

Triangulo equivalente

|                                     |                               |
|-------------------------------------|-------------------------------|
| $U_F = 230 \text{ V}$               | $IF = 14,81 \text{ A}$        |
| $Z_T = 15,525 \angle 36,8699^\circ$ | $= 12,42 + j 9,315 \text{ j}$ |

$I_1 = 25,66 \angle 53,1301^\circ = 15,40 + j 20,53 \text{ j}$

$I_2 = 25,66 \angle -66,8699^\circ = 10,08 + j -23,60 \text{ j}$

$I_3 = 25,66 \angle -186,87^\circ = -25,48 + j 3,07 \text{ j}$

|                       |          |
|-----------------------|----------|
| $P = 1472 \text{ W}$  | $CV = 2$ |
| $fdp = 0,9$           | $h = 1$  |
| $U_L = 230 \text{ V}$ |          |

|                          |                         |
|--------------------------|-------------------------|
| $P = 1472 \text{ W}$     | $j = 0,451 \text{ rad}$ |
| $Q = 712,92 \text{ Var}$ | $j = 25,842^\circ$      |
| $S = 1635,6 \text{ VA}$  | $IL = 7,1111 \text{ A}$ |

$Z = 32,344 \angle 25,84^\circ = 29,109 + j 14,1 \text{ j}$

$U_{RS} = 230 \angle 120^\circ = -115 + j 199,2 \text{ j}$

$I_{RS} = 7,1111 \angle 94,16^\circ = -0,516 + j 7,092 \text{ j}$

$I_1 = 7,1111 \angle 94,16^\circ = -0,516 + j 7,092 \text{ j}$

$I_2 = 7,1111 \angle 274,2^\circ = 0,5156 + j -7,092 \text{ j}$

$I_3 = 0 \angle 0^\circ = 0 + j 0 \text{ j}$

Aplicando el primer lema a cada fase obtenemos las intensidades totales:

$I_{T1} = 31,374 \angle 61,69^\circ = 14,88 + j 27,62 \text{ j}$

$I_{T2} = 32,467 \angle 289,05^\circ = 10,60 + j -30,69 \text{ j}$

$I_{T3} = 25,660 \angle 173,13^\circ = -25,48 + j 3,07 \text{ j}$

Lectura de A1: 31,4 A

Lectura de A2: 32,5 A

Lectura de A3: 25,7 A