400V/690V 400V

Δ Y → U

Δ !

97 A/56A ⇒ 97A = In

$P_{an} = \sqrt{3} U I \cos\varphi$

$= \sqrt{3} \times 400 \times 97 \times 0,87$

$= 58,5$ kW.

$$P_{eu} = \eta P_{a_n} = 58,5 \times 0,94$$

$$= 55\,kW$$

$Q_{22} \rightarrow$ 50 Hz $\rightarrow$ 3000 / (1500) $= n_s$

$n_n = 1480$ → 1000

$$p = \frac{f}{n_s} = \frac{50}{\frac{1500}{60}} = \frac{3000}{1500} = 2 \text{ paires}$$

(4 pôles)

$$T_{en} = \frac{P_{en}}{\Omega_n} = \frac{5510^3}{1480 \times \frac{2\pi}{60}} = 355\,Nm$$

Q25 $\overline{T_{elGV}} = 240\ Nm$

$n_{GV} = 1430\ tr.min^{-1}$

Q26 $P_{elGV} = \overline{T_{elGV}} \times \Omega_{GV}$

$= 240 \times \frac{1430 \times 2\pi}{60} = 40.3\ kW$

Q27 $T_{epv} = 140\ N_m$

$n_{pv} = 1120\ tr.min^{-1}$

Q28 $n_{sp} = 1125\ tr.min^{-1}$

$f = n_s \times p = \frac{1152}{60} \times 2 = 37,5\ Hz$

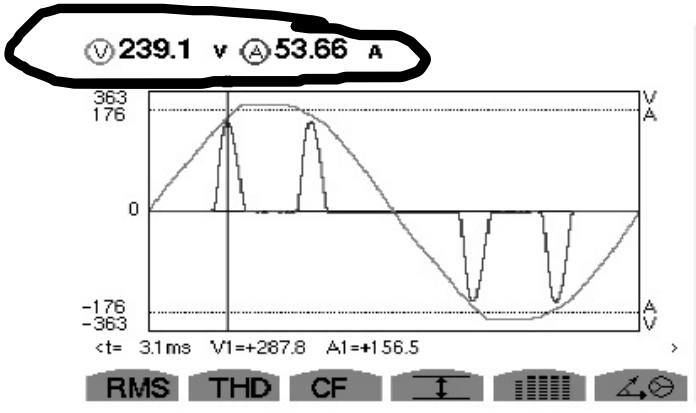
$\frac{U_{pv}}{f_{pv}} = \frac{U_{av}}{f_{av}} \Rightarrow U_{pv} = \frac{U_{av}}{f_{av}} \times f_{pv}$

$= \frac{4100}{500} \times 37,5 = 300\ V$

$$\eta_{30} = \frac{16,3}{0,92} = 17,7\ kW$$

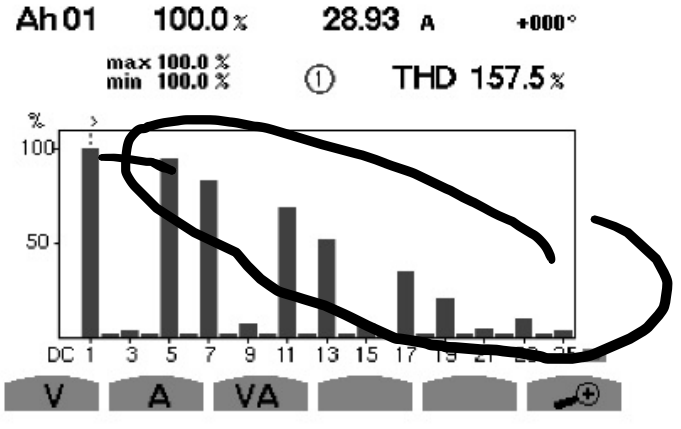
$$\frac{17,7}{40,3} = 0,44 \quad 44\%$$

Q31

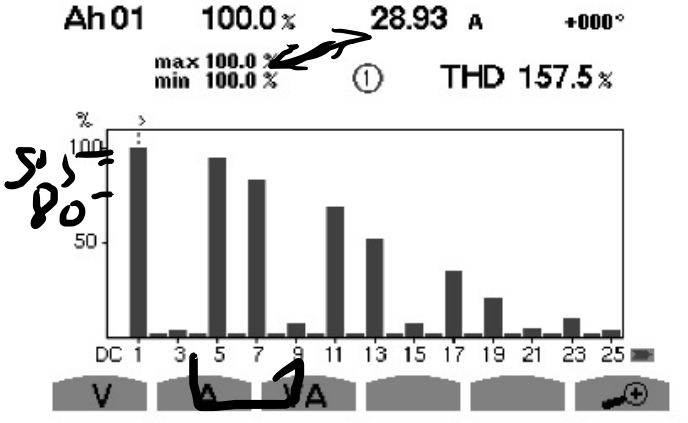


Écran 1

Q32



Q 33



5 er 7

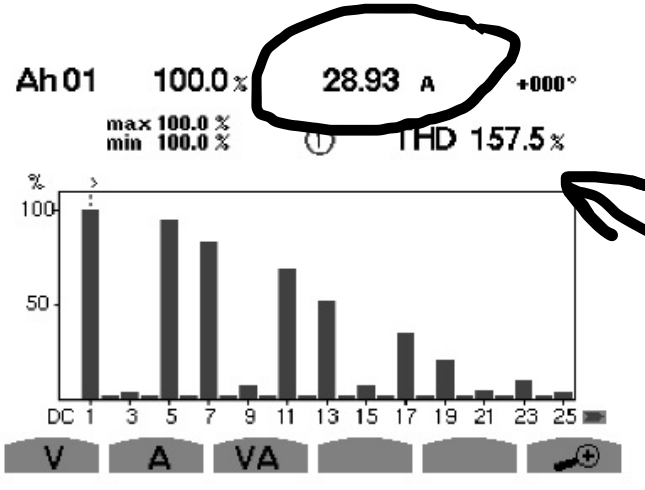
250 Hz 350 Hz

0,95 × 28,93 0,8 × 28,93

27,8 23A.

$$THD = \frac{\sqrt{I^2 - I_1^2}}{I_1}$$

$$= \frac{\sqrt{53{,}66^2 - 28{,}93^2}}{28{,}93}$$

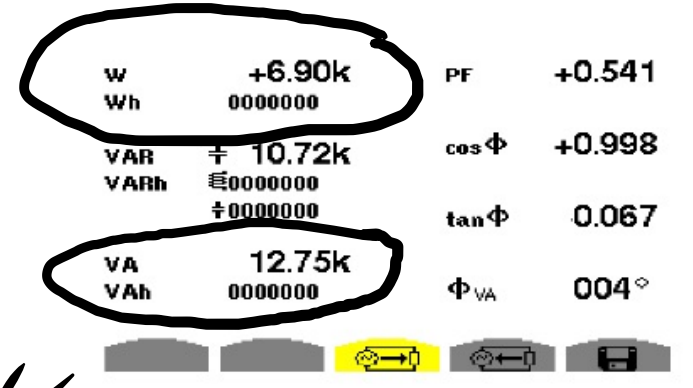


$= 1{,}54$

$154\ \%$

Q35 F. Ptre

Q36



Écran 2

$S = UI = 239,1 \times 53,66$

$= 12,83 \Rightarrow 12,75$

$P = S \times PF = 12,83 \times 0,541 = 6,94$

$\sim 6,9$

Q 37

$P_{arr} = 3 \times 6,9$

$= 20,7 \text{ kW}$