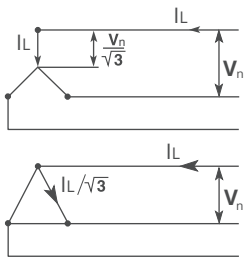
Formule techniques
Technical formulas

Tab. 43

Courant absorbé en ligne
Absorbed line current

$$I_L = \frac{P_n}{\sqrt{3} \cdot V_n \cdot \eta \cdot COS\varphi} \text{ [A]}$$



S.I. [ ] S.I. = Système International / *International System*

S.T. ( ) S.T. = Système Technique / *Technical System*

Unité de mesure / *Units of measure:*

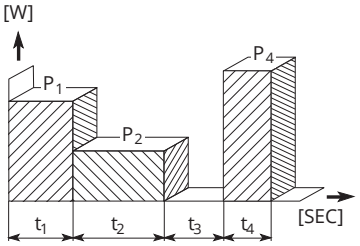
P_n = [W]
V_n = [V]
η = Rendement / *Efficiency*

Couple nominal
Rated torque

$C_n = \frac{P_n}{\omega}$ [Nm] $\quad (M = 0{,}975 \cdot \frac{P_n}{n})$ $\quad \omega = \frac{2 \cdot \pi \cdot n}{60}$ [rad/s]

Puissance thermiquement équivalente en service intermittent
Thermally equivalent power in intermittent duty

$$P_t = \sqrt{\frac{P_1^2 \cdot t_1 + P_2^2 \cdot t_2 + P_4^2 t_4}{t_1 + t_2 + t_4 + t_3 / 4}} \text{ [W]}$$



la formule est valable pour / *the following formula is used:* $0{,}3 \cdot P_n \le P_{1,2,4} \le 1{,}5 \cdot P_n$

Puissance apparente
Apparent power

$A = \sqrt{3} \cdot V_n \cdot I_L \cdot$ [VA]

Energie
Energy

$E = P_n \cdot t$ [J]

Moment d'inertie pour symétrie cylindrique
Inertia moment for cylindrical symmetry

$J = (1/2) \cdot M \cdot R^2$

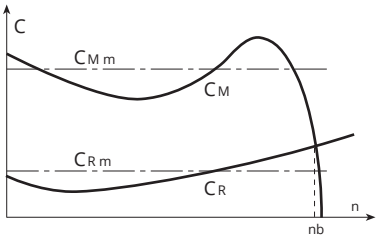
M = [kg] (poids / *mass*)
R = [m] (rayon / *radius*)

Temps de démarrage
Starting time

$$t = \frac{(J_m + J_L) \cdot \omega}{C} \text{ [S]}$$

(où : / where: $C = C_{Mm} - C_{Rm}$)

$$(t = \frac{(PD_M^2 + PD_L^2) \cdot n}{375 \cdot M}) \text{ [S]}$$



J = [kg • m²]
M = [kg• m]
n = [min⁻¹]
PD² = [kg•m²]

Niveau de pression sonore
Sound pressure level

$L_{PA} = 20 \cdot \lg (\frac{P}{P_0})$ [dB]

Niveau de puissance sonore
Sound power level

$L_{WA} = L_P + 10 \cdot \lg (\frac{S_e}{S_0})$ [dB]

Amplitude de vibration
Vibration amplitude

$S = \frac{\sqrt{2} \cdot V_{eff}}{2 \cdot \pi \cdot f}$ [mm]

P = [N/m²]
S = [m²]
V = [m⁻³/S]
f = [s⁻¹]

P = pression sonore / *noise pressure level*
P_0 = $2 \cdot 10^{-5}$ N/m² (seuil d'audibilité) / *$2 \cdot 10^{-5}$ N/m2 (threshold of audibility)*

S_e = superficie effective de mesure / *measure efffective surface*
S_0 = 1m = superficie de référence / *reference surface*

V_{eff} = vitesse de vibration / *vibration speed*
f = fréquence de vibration considérée / *considered vibration frequency*