

PMSM motor

관련 Reference link

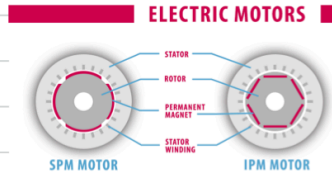
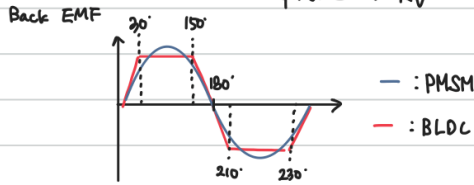
- [wiki](#)
 - [Motor constants](#)
 - [FOC \(vector control\)](#)
- [PMSM vs BLDC tutorialspoint]([https://www.tutorialspoint.com/difference-between-bldc-motor-and-pmsm-motor#:~:text=BLDC motor is a direct,alternating current \(AC\),motor.&text=The waveform of back emf,PMSM motor is sinusoidal shaped.](https://www.tutorialspoint.com/difference-between-bldc-motor-and-pmsm-motor#:~:text=BLDC motor is a direct,alternating current (AC),motor.&text=The waveform of back emf,PMSM motor is sinusoidal shaped.))
- [PMSM vs BLDC reddit](#)
- https://kr.mathworks.com/help/mcb/pmsm.html?s_tid=CRUX_lftnav
 - └ 매트랩 예제들
 - └└ 이를 통해서 제어 방법에 대한 거를 볼 수 있을듯?

나만의 언어로 정리하기

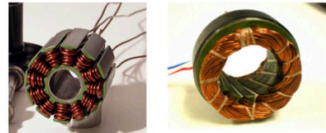
2. PMSM Motor

6Step.
: BLDC | DC : 사다리꼴 : ↓ : scalar 제어
(BLAC) PMSM | AC : 3phase 정현파 : ↑ : Space Vector 제어

phase of K_v τ

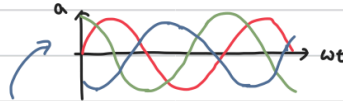
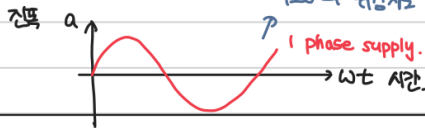


Concentrated Distributed



- 3 phase Motor.

• 3 phase power.

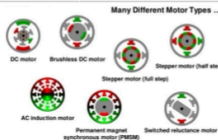


$$\vec{\nabla} \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$$

회전자 속도가 지연된 현상

$$S_{lip} = \frac{N_s - N_p}{N_s} \rightarrow \text{회전자}$$

$N_s \rightarrow$ RMF (2쌍 자기장)



• 벡터 제어 기법 (FOC)

: 교류 전동기 제어 기술 중 1.

사각파 → 정현파. → PWM은 이용해 전류가 크도록 변화.
for this, I_{ref} , 회전자 위치 판독 필요

→ 요구 1) 모터의 자속 정의 Flux command
2) " 토크 정의 Torque command

자속과 토크 관련 Slip Speed와 Rotor Speed의 합의 적분값

+ 현재 V, I, Flux, Torque

↓
Inverter
↓
PM

