

Ölçme Kontrol ve Otomasyon Sistemleri

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Dr. Mehmet Ali DAYIOĞLU

Ankara Üniversitesi Ziraat Fakültesi
Tarım Makinaları ve Teknolojileri Mühendisliği Bölümü

Actuator (Aktuatör) Kumanda cihazı

Kumanda Cihazları

Kumanda cihazları enerji kaynağına göre sınıflandırılır:

- Elektrikli,
- manyetik,
- pnömatik,
- hidrolik kumanda cihazları.

Bunlar motor, vana, pompa, fanın çalışma rejimlerini (start/stop) kontrol eder.

Kumanda cihazları açık (NO) pozisyondan kapalı (NC) pozisyona getirilmesinde kullanılır. Kumanda cihazının tepki hızı ve elektriksel özellikleri uygun olmalıdır.

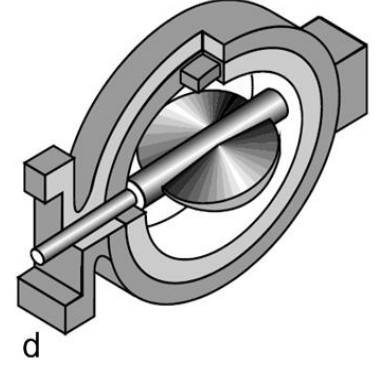
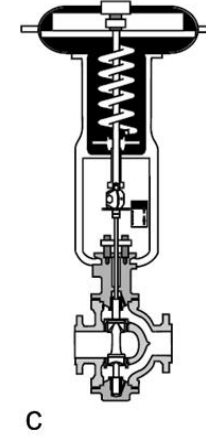
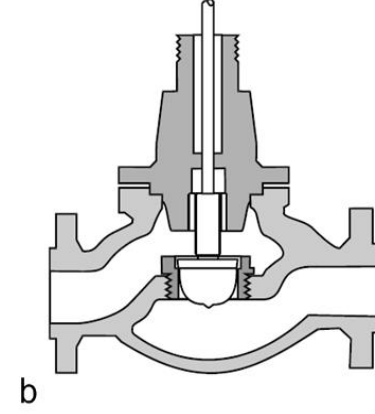
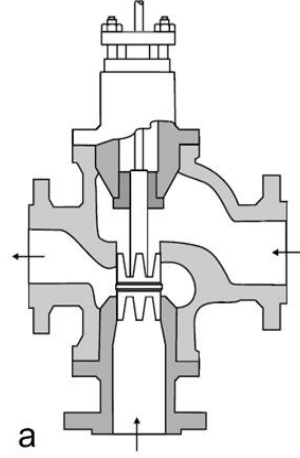
Uygulama özelliklerine göre, farklı tip cihazlar kullanılabilir:

- a) Röle,
- b) Pnömatik valf,
- c) Solenoid valf,
- d) Kontaktör.



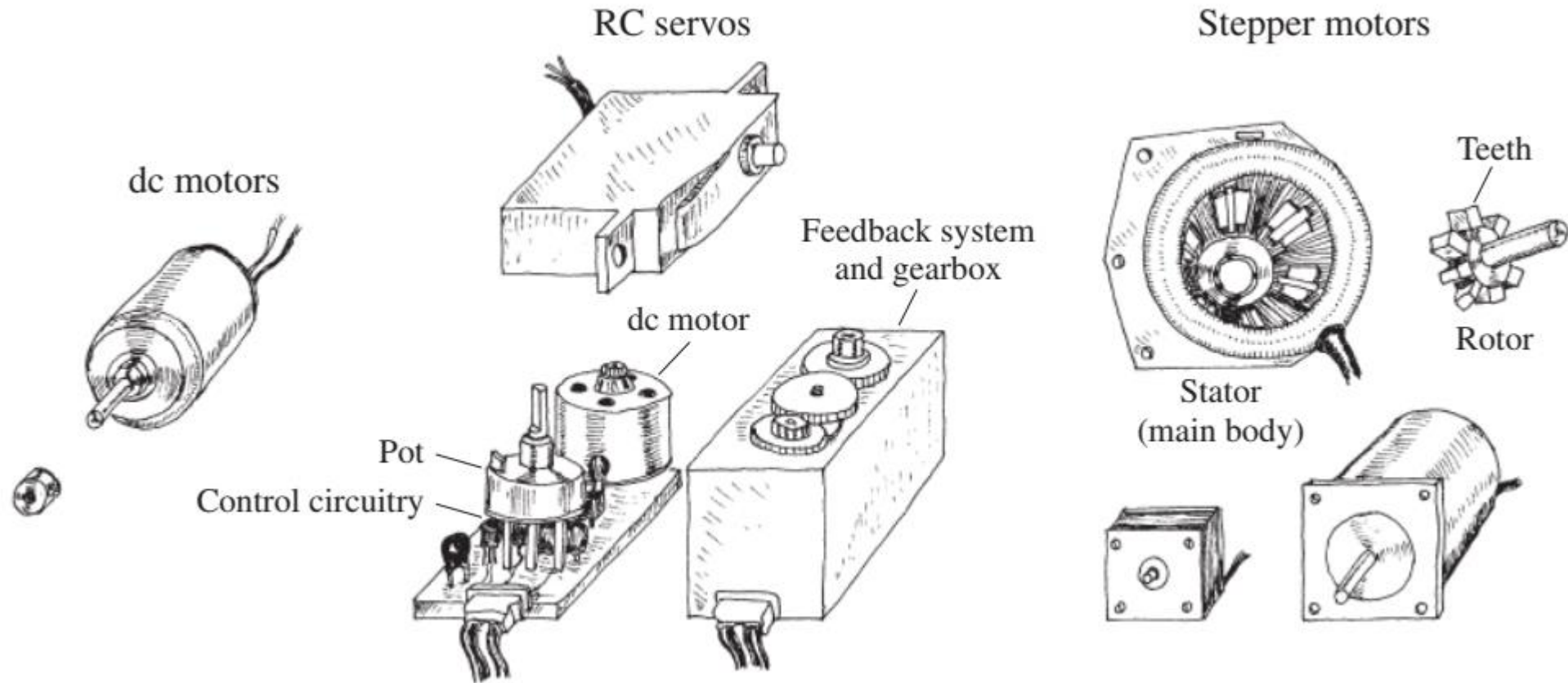
Actuator (Aktuatör) Kumanda cihazı

- a) Üç yollu karışım valfi,
- b) Tek geçişli sürgülü valf,
- c) Çift geçişli sürgülü valf,
- d) Döner tip kelebek valfi.



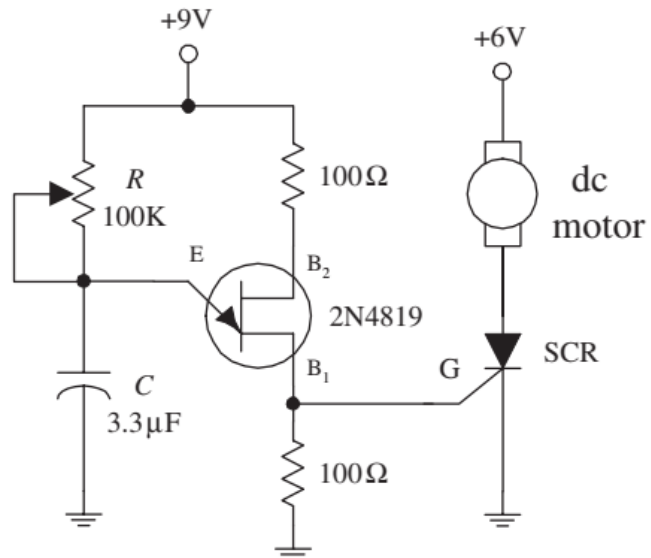
MOTORLAR

DC motorları, RC servoları ve step motorları çoğu otomasyon uygulamalarında kullanılmaktadır.

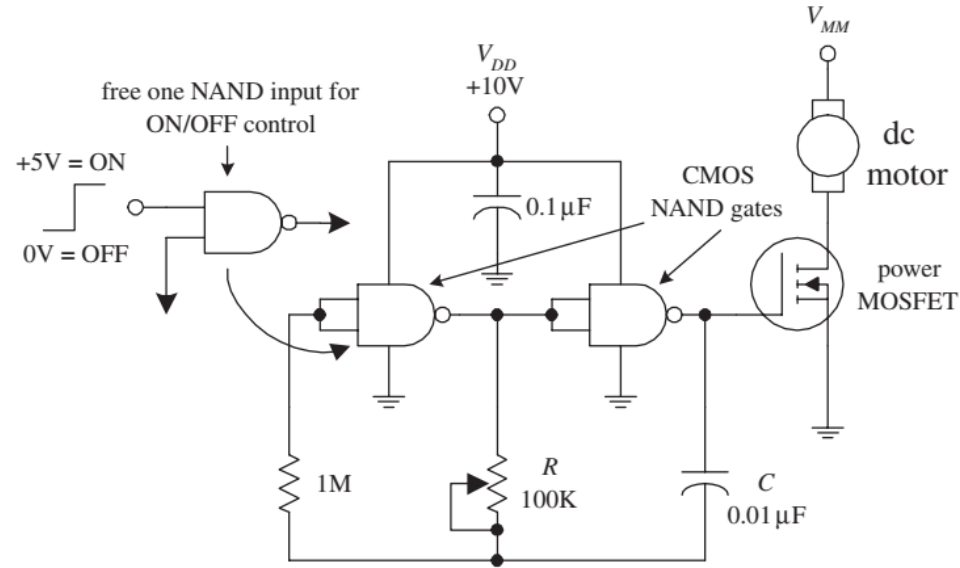


DC motor hız kontrolü

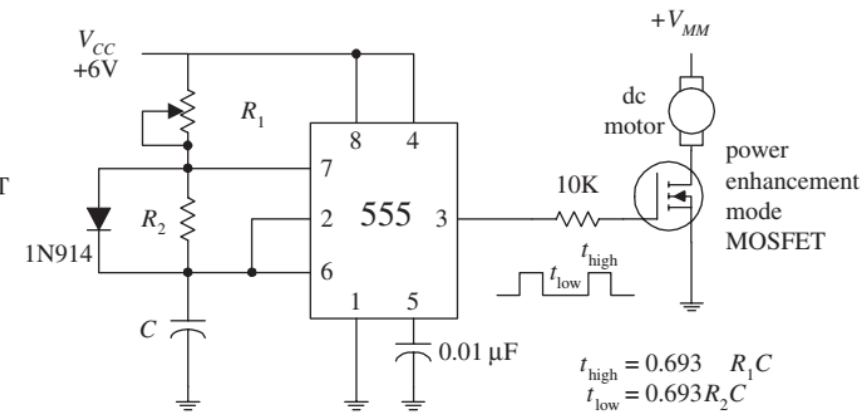
UJT/SCR Control Circuit



CMOS/MOSFET Control Circuit

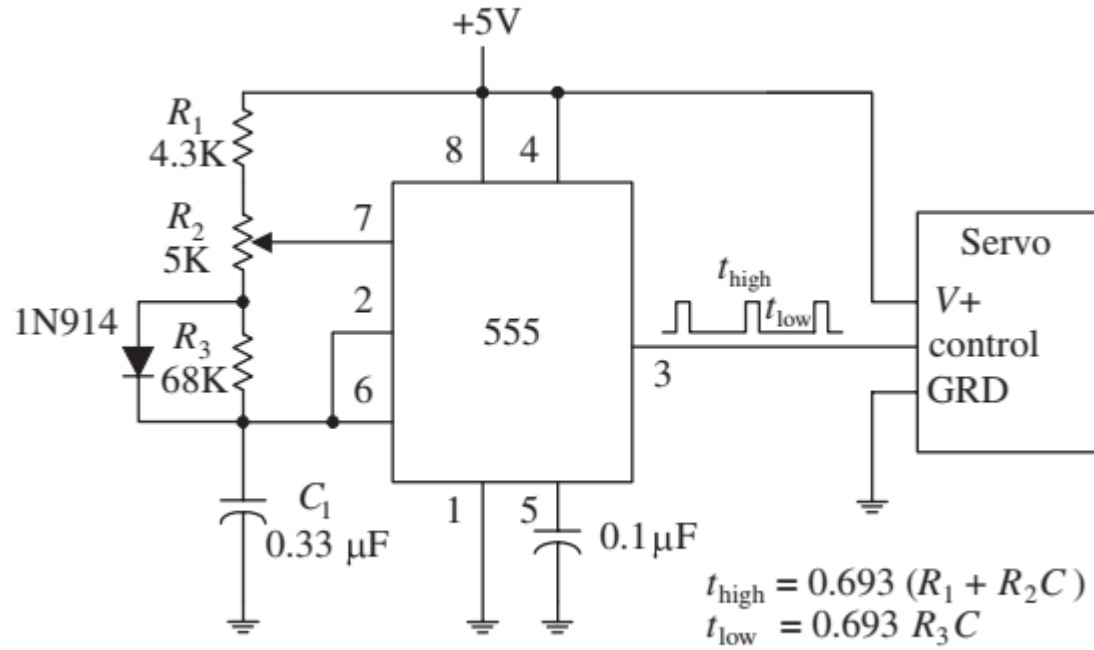


555 Timer/MOSFET Control Circuit



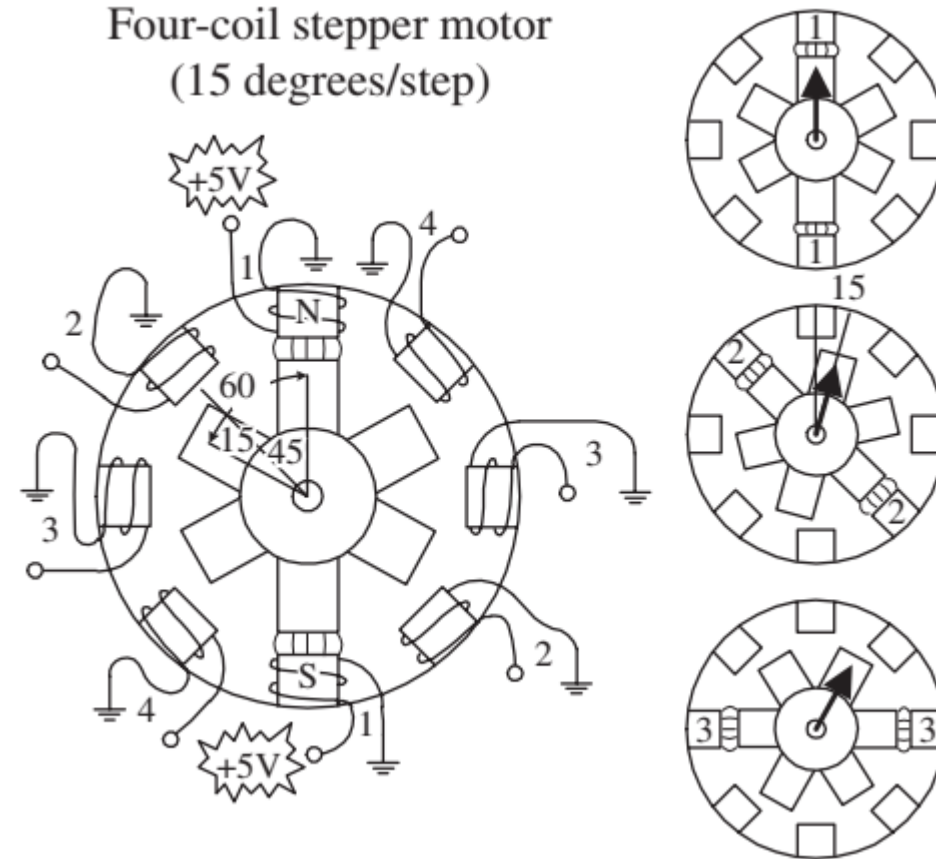
Remote control (RC) servo motor (pozisyon kontrolü)

Simple servo driver



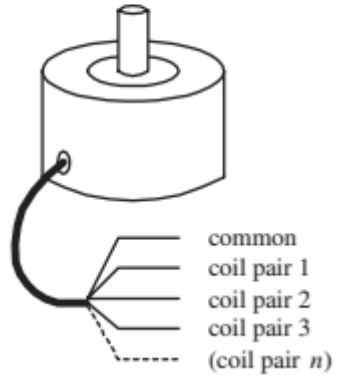
Stepper Motors Adım motorları

Step motorlar özel bir kontrol devresiyle saat darbesi uygulandığında belirli bir derece döndürülen (bir adım) dijital olarak kontrol edilen fırçasız motorlardır.

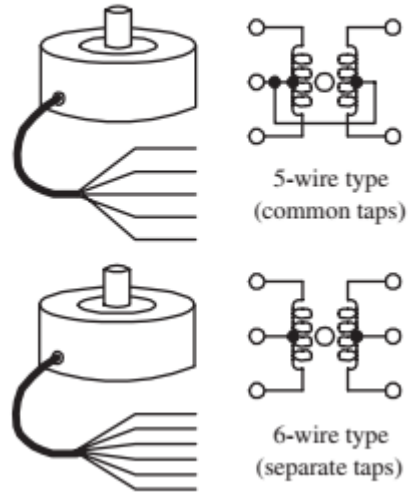


Stepper Motor tipleri

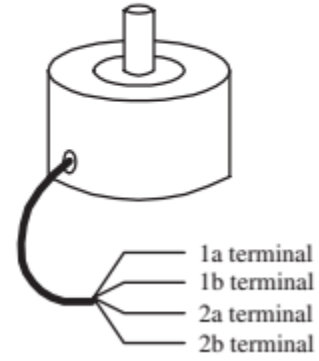
Variable Reluctance Motor



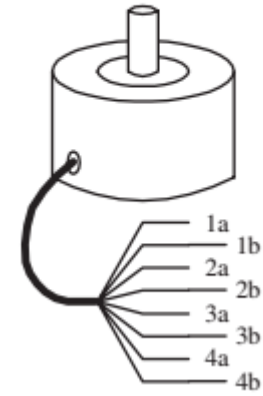
Unipolar Motors



Bipolar Motor

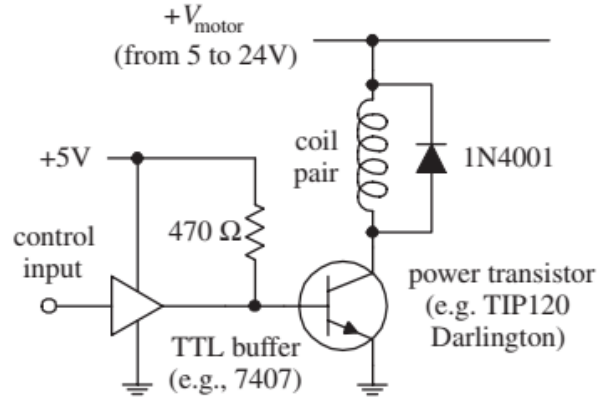


Universal Stepper Motor

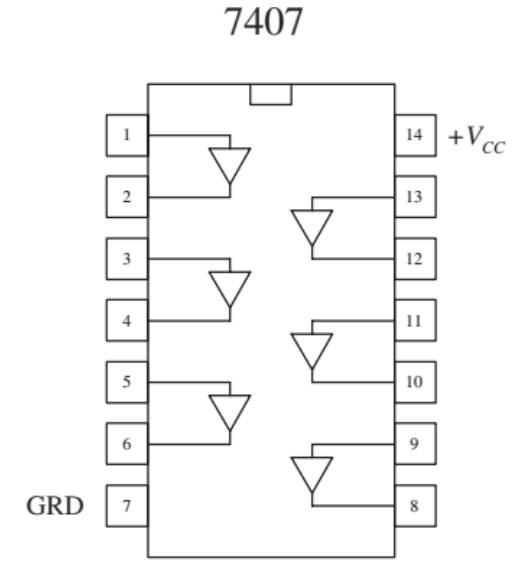
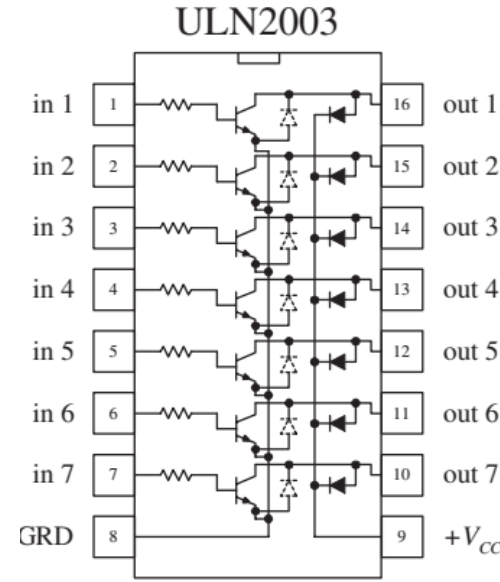
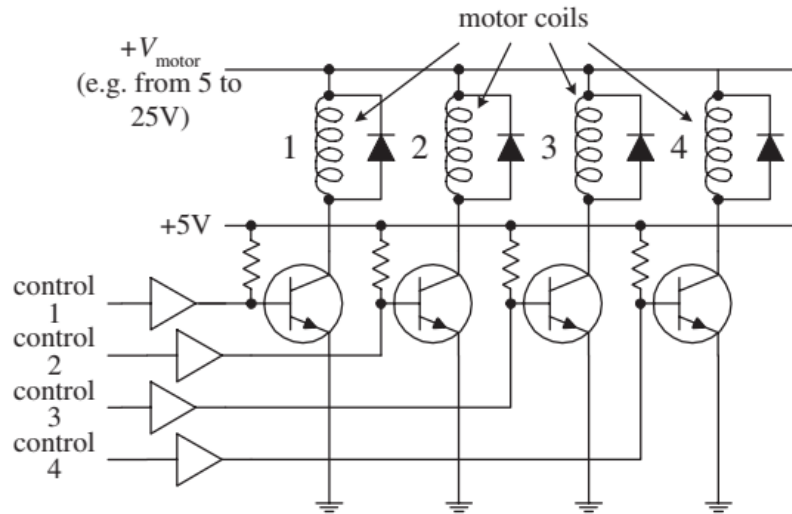


Stepper Motorun sürülmesi

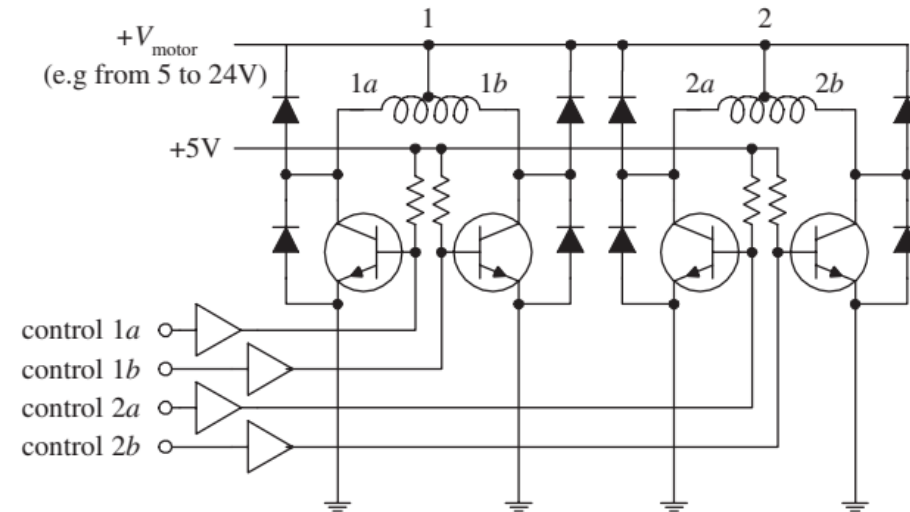
Single Driver Section



Variable-Reluctance Driver Network



Unipolar Driver Network



Kaynaklar (References)

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