ENGR 3421: ROBOTICS I

Encoder

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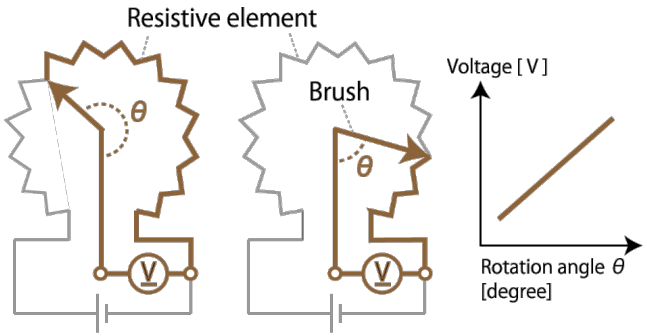
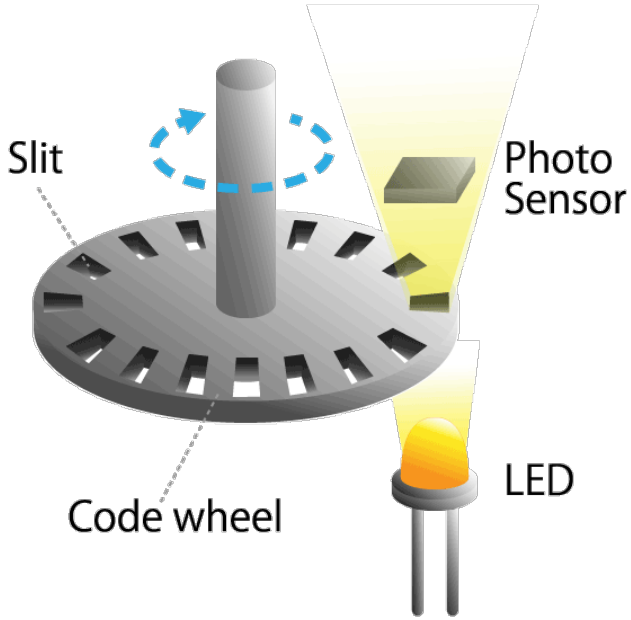
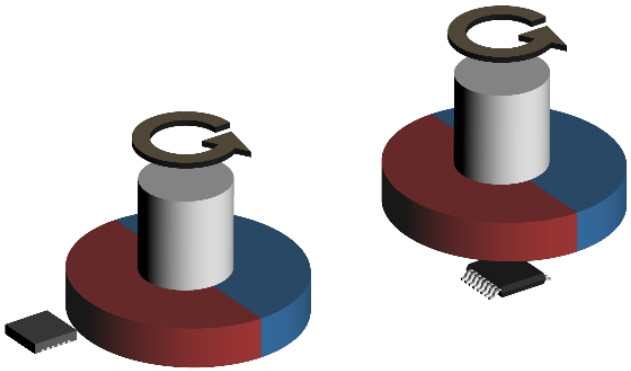
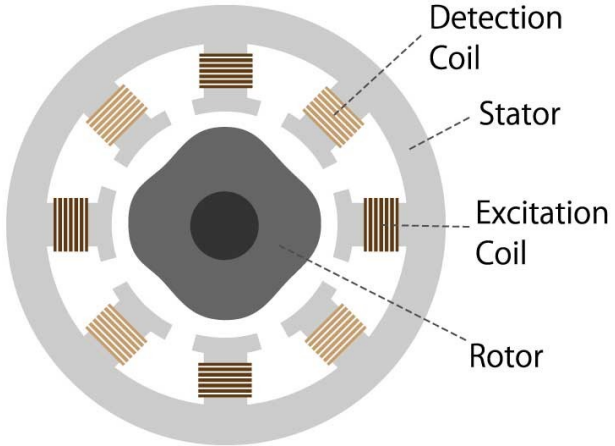
Types of Encoder

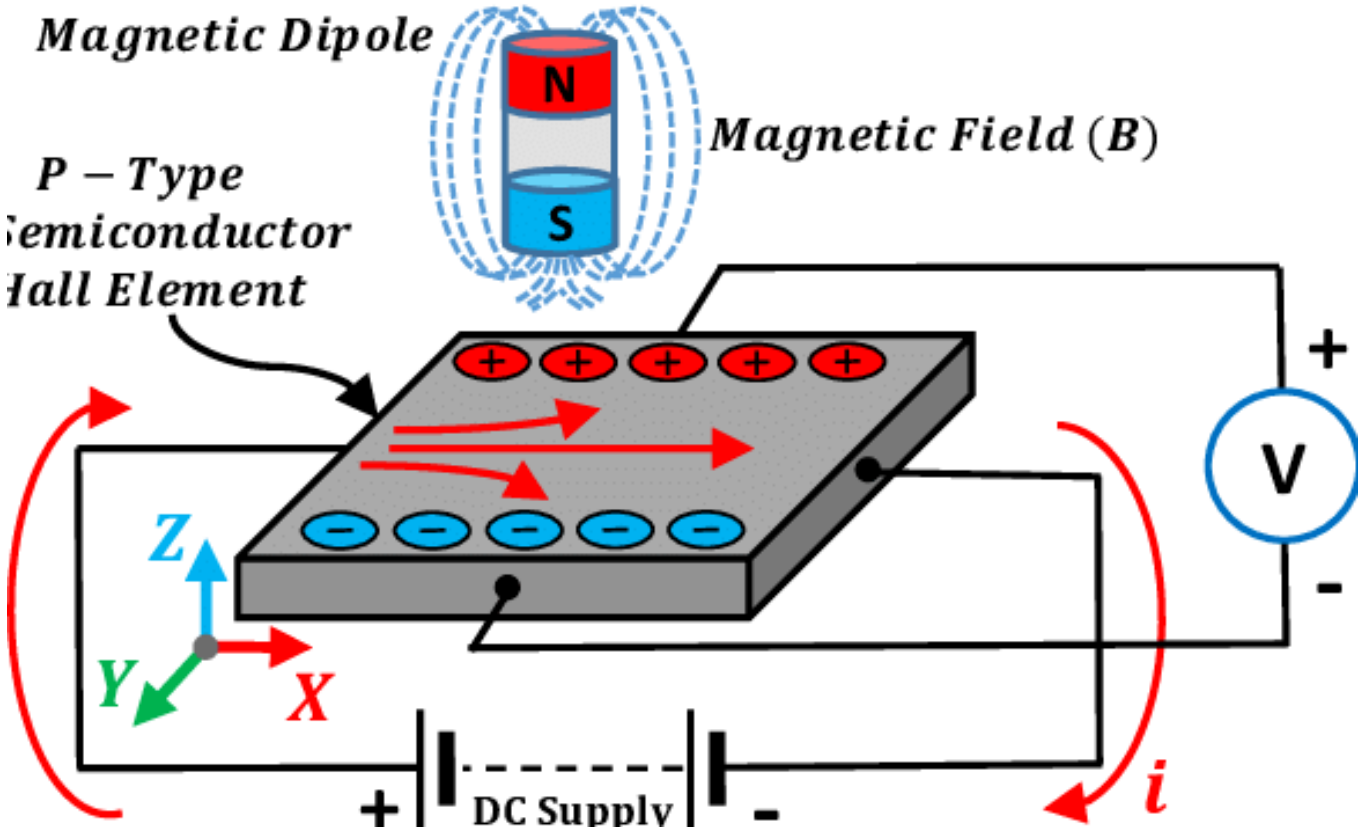




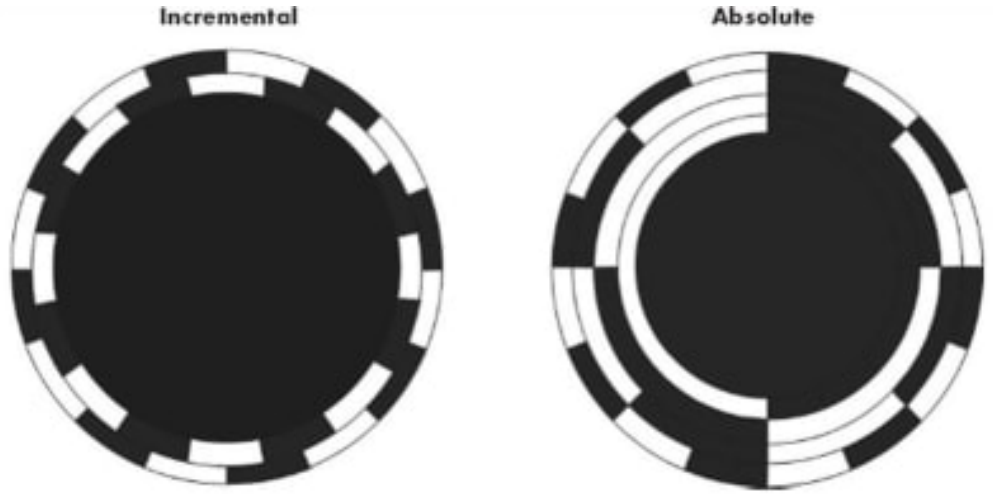




Hall Effect


Magnetic Dipole
N
S
Magnetic Field (B)
P – Type
Semiconductor
Hall Element
+
V
-
Z
Y
X
+
DC Supply
-
i

Absolute Encoder vs. Incremental Encoder



Absolute	Incremental
More complicated	Simpler
Output position and velocity	Output velocity and displacement (optionally direction)
Fixed origin	Floating origin
Lower cost	More expensive

Quadrature Encoder