
0.1 Theory

This subsection is dedicated to explaining the theory to what a Qqadrature encoder is and what it does.

A Quadrature Encoder uses two channels to sense the position of, typically, a rotating disk/shaft or a linear strip. The disk or strip has two paths on it, positioned 90 degrees out of phase of each other, see figure 1. Stationary sensors are placed, so that when the tracks move the sensors produce an output signal depending on the part of the track that is visible. The output consists of two outputs, one for each track/channels, typically called A and B, see figure 2

Rotary Code Tracks

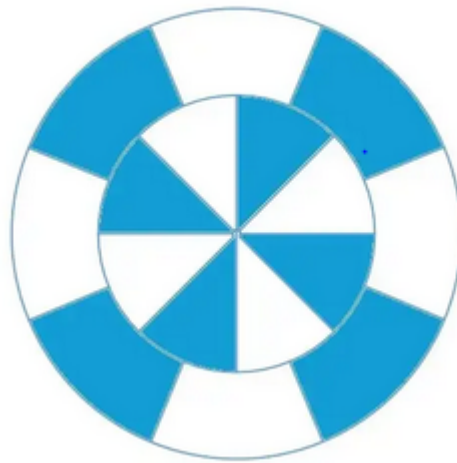


Figure 1: *The figure shows the tracks of a rotary encoder.*

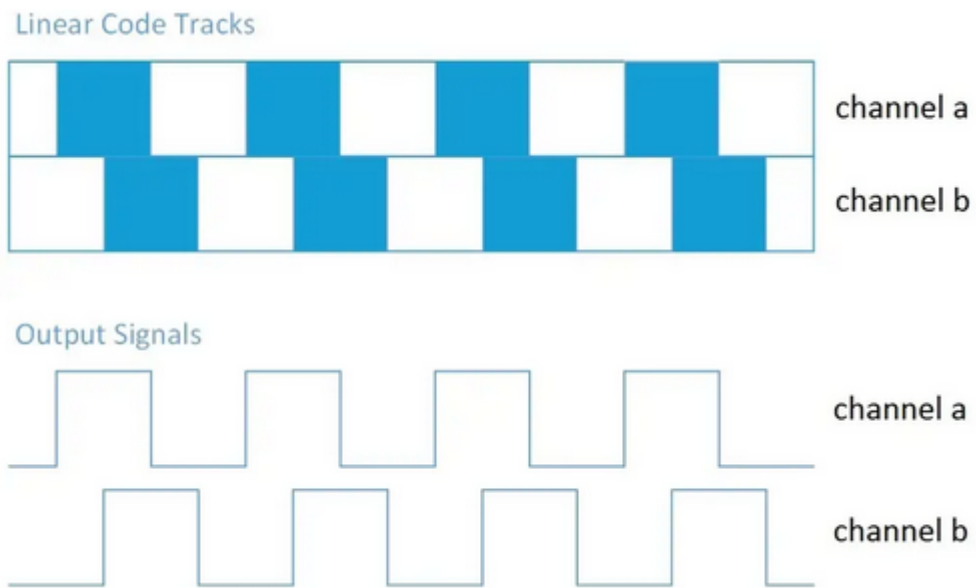


Figure 2: *This figure shows the two channels and logic output of them*

The Quadrature Decoder is the one interpreting the output signals created by the Quadrature Encoder. It determines how far the apparatus has moved, since last movement, by counting the transitions on the two channels. It uses the same principle to determine the direction of the movement. As it can be seen on figure 2, the pattern for a clockwise movement is channel A going high before B and vice versa for counter clockwise.