Microcontroller Projects

Monday, October 8, 2012

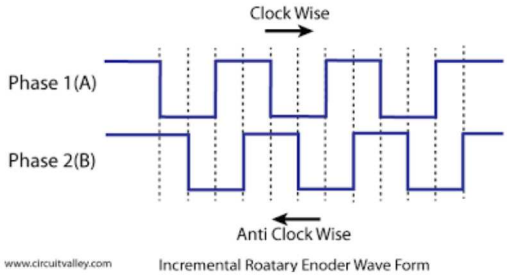
Rotary Encoder Interfacing with PIC Mirocontroller

i am currently working with some power supply design and i can say using conventional pots(potentiometer) and rotary switch to adjust the voltage and other stuff is quite old school. so i have decided to go for a bit high tech , actually bit digital.
so here is the solution

Incremental Rotary Encoder
first of all i would like to tell you , these type of rotary encoder is totally digital component so you can't directly replace these with you conventional pots. so lets start what are Incremental Rotary Encoder , Incremental rotary encoders by the looks of it just like a general purpose pot looks like but output is quite different they provide a pair of digital signals that allow a microcontroller to determine the direction of a shaft's rotation. They can be used to monitor motors and mechanisms, or to provide a control-knob user interface.

for a quick look here is a typical incremental rotary encoder

and hear the output wave form



Incremental Roatary Enoder Wave Form

Decoding with Microcontroller

in this examples we will be decoding the rotary encoder with the help of sate machine.

We Need your Support

**Hi Friends , if you find all of these things useful and want to Please donate me few bucks through paypal .
it will help me to keep this up!!!**

Only a tiny
Option 1 : $1.00 USD - monthly
Donate

Donation
Tiny $2.00 USD
Donate

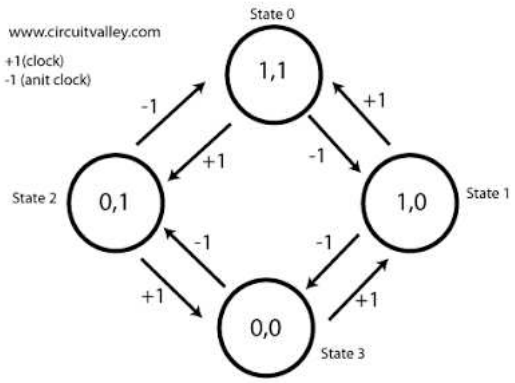
Labels

Atmel 8051 (1)
Atmel AVR (4)
COM Port Programmer (2)
IR Remote Control (3)
LCD Graphics and Alphanumeric (11)
Meters (7)
Microchip PIC Mircocontroller (23)
MSP430 Launch Pad (6)
MSP430 Microcontroller (6)
Programmer (5)
Robotics (1)
Serial Port Programmer (2)
Test Instruments (9)
Tutorial (4)
USB Interface (3)
USB Programmer (3)

Total Pageviews

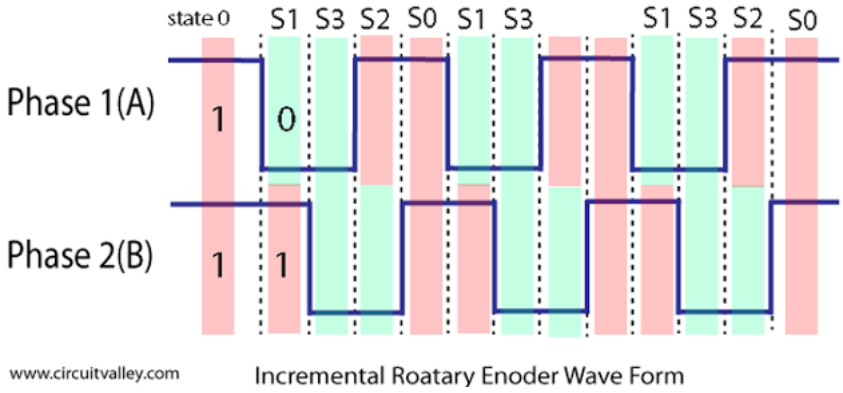
1,371,530

Followers



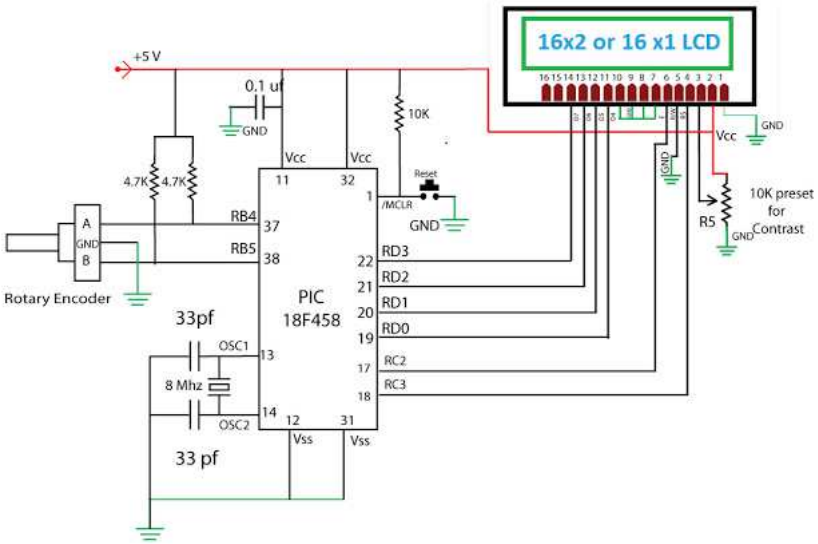
Incremental Roatary Enoder state machine

view of state machine in the wave form



Incremental Roatary Enoder Wave Form

Schematic with PIC18F458



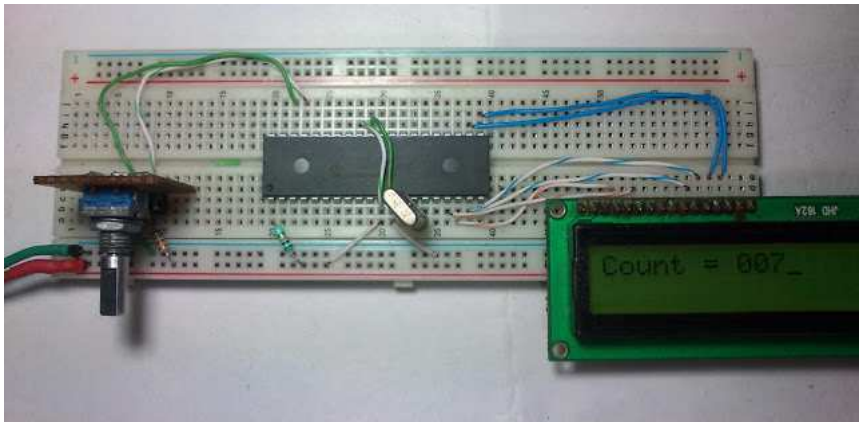
Blog Archive
► 2015 (5)
► 2014 (1)
► 2013 (2)
▼ 2012 (9)
▼ October (1)
Rotary Encoder Interfacing with PIC Mirocontroller...
► September (3)
► March (2)
► February (3)
► 2011 (18)

About Me

Gaurav Chaudhary

I m a Electronics/Software Design Engineer From Dehradun. Anybody have doubts in electronics system design and software system design may ask questions any time

View my complete profile



Source code and firmware

CLIK Here To download Source Code and Firmware,

if you have any problem please leave in the comment section.

Posted by Gaurav Chaudhary at 11:41 AM

Labels: Microchip PIC Mircocontroller, Tutorial

3 comments:

vinoth December 30, 2012 at 10:09 AM

hello gaurav
please post the uc code for interfacing rotary encoder

Reply

vinoth December 30, 2012 at 10:10 AM

if possible use atmel mega x chips

Reply

Vladislav Stankovic November 13, 2013 at 1:04 AM

This code is incomplete, you must do the revision. Program increments the variable just to pin 4 and pin 5, with no requirement to complete full cycles of 10,11,01,00. These can lead to an incorrect reading of the encoder.

Reply

Newer Post Home Older Post

Subscribe to: Post Comments (Atom)