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Automatically Displaying the Tyre Air Level, Fuel Distance Level and Engine Heat Condition in The Vehicle

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Abstract - **Now days the technologies are highly developed, so we can like to simplified life. Mostly everyone had bike but the bike all time work properly so we needed the mechanic people don't know about the basic thing of the bike.**

This project is focused on designing and developing a direct the measurement of the air pressure, heat level and fuel level is taken directly using pressure sensor, temperature sensor and ultrasonic sensor.It process is processing and output is displaying to LCD display.

Keywords- arduninoatmega 328, pressure sensor bmp180, temperature sensor dht11, ultrasonic sensor hc-sr04, LCD display

INTRODUCTION

The basic information of the bike like fuel level, engine efficiency and air pressure are denoted on the display. This information are collected by using sensor (pressure, temperature and ultrasonic sensor) and the data are collected and analyzing by embedded module and display.

A air pressure sensor bmp 180 is measured in bike tyre air level, it is denote the air and transmittedthe wireless signal to LCD display monitoring. Another sensor is used to this project are temperature sensor it is measured the engine heat condition process and output is passed through with wired network to LCD display, and   last one sensor is ultrasonic sensor, this is process on fuel distance level detecting, it also output in wired network.

All processing are displaying the one LCD display monitoring. A LCD display is used to 16×2 line display. the calculate the all types of processing is important body condition in bike.

EXISTING SYSTEM

The earlier systems is only used for surrounding environment measurement technology. A pressure sensor system is extra equipment to handling the check for pressure in vehicles.Theyare wired communication not for wireless so cost is high. The temperature sensor are used in the existing report on room temperature is measured. So they not effective project in society. It is weather report is only most used for the sensor. And another sensor is ultrasonic sensor, its based from distance , measured sensor, using on wired network. In order to reduced in vehicle that many accident, lot of spent money. they are all project is many cost effective, and using for individual processing on equipment

DRAWBACKS OF EXISTING SYSTEM

The existing system does not used advanced micro controller

PROPOSED SYSTEM

In proposed system we introduce the advanced vehicles system, a current bike system are only measured speed calculate and petrol level but this project is advance to calculate the tyre air pressure level, fuel distance level and engine body condition. Aarduinoatmeaga 328 micro controller are used in project, because advance system in micro controller systems. A vehicle total body conditions are day by day update in LCD display. so long life of vehicle is working condition. The sensors(pressure sensor, ultrasonic sensor and temperature sensor) are all sensor is implemented to one arduino micro controller. So low cost of made this project. The using coding are always all sensor common for coding, that coding are embedded system. By implement aarduino micro controller.

ADVANTAGES

A vehicle conditions are update for day by day

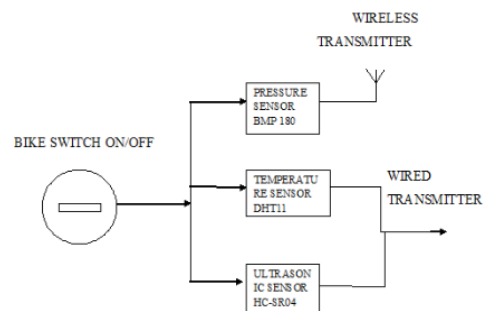Less cost and long life performance

BLOCK DIAGRAM
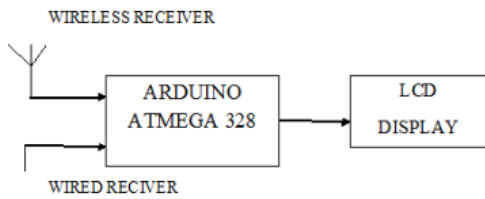

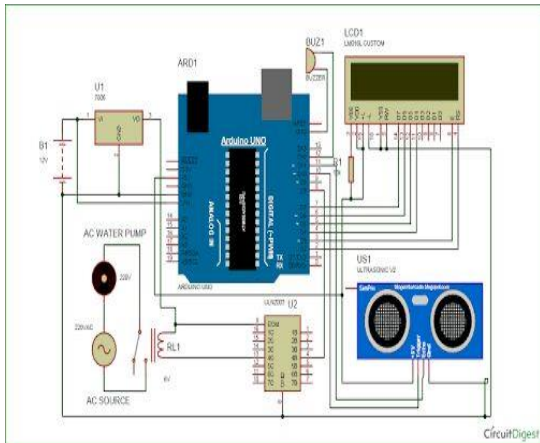Fig 4.1 Block Diagram For Transmitter Section

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Fig 4.2 Block Diagram For Receiver Section

OVER ALL CIRCUIT DIAGRAM

ARDUINO ATMEGE 328

The Atmel picoPower ATmega328/P is a low-power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture. Byexecuting powerful instructions in a single clock cycle, the ATmega328/P achieves throughputs close to 1MIPS per MHz. This empowers system designer to optimize the device for power consumption versus processing speed.
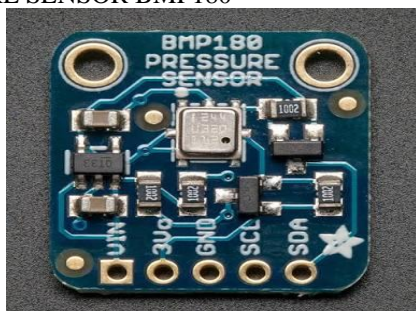
PRESSURE SENSOR BMP180

Fig 6.2 Pressure Sensor BMP 180

This precision sensor from Bosch is the best low-cost sensing solution for measuring barometric pressure and temperature. Because pressure changes with altitude you can also use it as an altimeter! The sensor is soldered onto a PCB with a 3.3V regulator, I2C level shifter and pull-up resistors on the I2C pins.

The BMP180 is the next-generation of sensors from Bosch, and replaces the BMP085. The good news is that it is completely identical to the BMP085 in terms of firmware/software/interfacing - you can use our BMP085 tutorial and any example code/libraries as a drop-in replacement. This board is 5V compliant - a 3.3V regulator and a i2c level shifter circuit is included so you can use this sensor safely with 5V logic and power. Using the sensor is easy. For example, if you're using an Arduino, simply connect

TEMPERATURESENSOR DHT11

Fig 6.3 Temperature Sensor DHT11

The DHT11 Temperature& Humidity Sensor features a temperature& humidity sensor complex with a calibrated digital signal output. By using the exclusive digital-signal-acquisition technique and temperature & humidity sensing technology, it ensures high reliability and excellent long-term stability.

This sensor includes a resistive-type humidity measurementcomponent and an NTC temperature measurement component, and connects to a high performance 8-bit microcontroller, offering excellent quality, fast response, anti-interference ability and cost-effectiveness.

Each DHT11 sensor is strictly calibrated in the laboratory that is extremely accurate on humidity calibration. The calibration coefficients are stored as programs in the OTP memory, which are used by the sensor's internal signal detecting process.

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ULTRASONIC SENSOR HC-SR04

Fig 6.4 Ultrasonic Sensor HC-SR04

A ultrasonic sensor are used to accurate measure tha distance length so it is used in bike fuel level condition, that sensor fixed in inside body of fuel tank.

A sensor are product to sound in the tank. In sound of reflected to measured the fuel distance level

Its working is quite simple, as discussed above, it has a trigger and an echo pin. A signal of +5V is sent over to Trigger pin for around 10 microseconds in order to trigger the sensor.

LCD DISPLAY 16×2

Fig 6.5 LCD Display 16×2

Alphanumeric displays are used in a wide range of applications, including palmtop computers, word processors, photocopiers, point of sale terminals, medical instruments, cellular phones, etc.

The 16 x 2 intelligent alphanumeric dot matrix display is capable of displaying 224 different characters and symbols. A full list of the characters and symbols is printed on pages 7/8 (note these symbols can vary between brand of LCD used).

This booklet provides all the technical specifications for connecting the unit, which requires a single power supply (+5V).

OUTPUT

The output is display in LCD display from sensors, they are engine temperature level, tyre pressure level and fuel distance level

CONCLUSION

Better accuracy on fuel status and air status and temperature of the vehicle. The proposed idea which consists of load cell based fuel measurement system that acquire the measured fuel level and send to the display unit which is present on the dash board.This system utilizes the techniques to provide a solution that analyze the measurement of the real-time tyre pressure.

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