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Electric Line Man Safety with Password Based Circuit Breaker

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ABSTRACT

The endeavor is deliberate to control an electrical transfer by using inclusive of a thriller word for the prosperity of electric guy. Essential electrical failures to line men are on the climb during electric powered line repair because of nonappearance of correspondence and co-association among the preservation team of workers and electric powered substation group of workers.

This proposed shape gives a response that ensures protection of care staff, i.E., line guy. The manipulate to turn ON/OFF the line may be stayed aware of with the aid of the road guy basically in mild of the truth that this machine has an arrangement so much that a thriller key is supposed to paintings the electrical switch (On/Off).

This machine is totally forced via a microcontroller from the 8051 own family. A Bluetooth contraption is cooperated to the microcontroller and Android smartphone used to go into the thriller key. The entered secret expression is differentiated and the thriller key set apart inside the ROM of the microcontroller. If the thriller word entered is accurate, handiest the road can be grew to become On/Off. The graduation/deactivation of the electrical switch is exhibited by way of a mild that turns ON or OFF.

Also, this enterprise in destiny may be progressed by way of the usage of EEPROM, for the customer to exchange the mystery expression for extra were given shape affiliation. It can furthermore be related to a GSM modem for fairly controlling the electrical switch thru SMS.

INTRODUCTION

An electric switch is a normally worked electric switch deliberate to shield an electrical circuit from hurt executed by over-weight or short out. Its fundamental restrict is to understand an trouble circumstance and impede current circulate. Not below any circumstance like a cord, which goes once and a short time later have to be outmoded, an electrical transfer can be reset (either truely or for that reason) to continue with everyday movement. When labored absolutely we see lethal electrical accidents to the line man are developing all through the electrical line fix in view of the shortfall of correspondence and coordination between the preservation workforce and the electrical substation workforce. To keep away from such injuries, the breaker can be so intended a lot that genuinely recommended person can paintings it with a mystery expression. This ensures security of the employee because nobody can turn on the road without his approval. The machine is definitely obliged by way of the eight digit microcontroller of 8051 circle of relatives. The thriller secret is looked after in an EEPROM, imparted to the microcontroller and the thriller key can be modified any time not whatsoever like a valid one ate up for all time on to the microcontroller. A keypad is used to go into the mystery key and a hand-off to open or incorporate electrical transfer, that's shown by using a light. Any inaccurate project to open the breaker (by means of entering a few fallacious thriller country) a caution will be enacted, exhibited through one more Driven

OBJECTIVE

- Intended to somewhere safe and secure for electrical technician
- This gives security upkeep
- This is constrained by Microcontroller
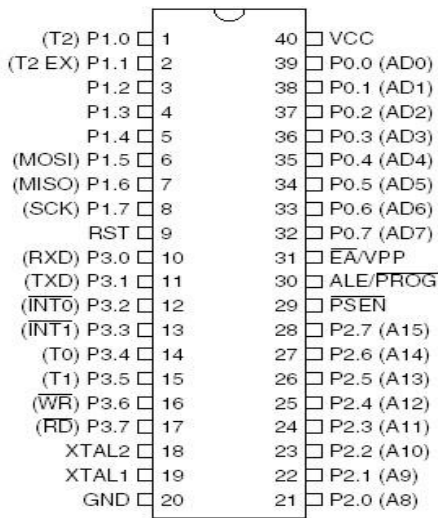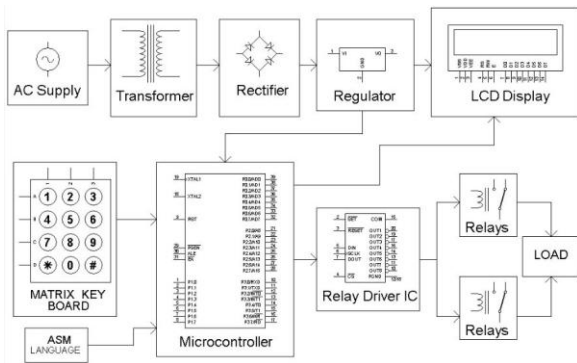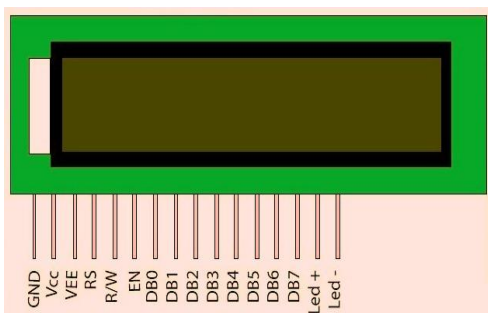- Secret key contrast and put away secret phrase in Slam of regulator

BOCK DIAGRAM

Figure taken from a datasheet provided by ATMEL™

HARDWARE REQUIREMENTS

1. **MICROCONTROLLER UNIT**

The AT89S52 is a low-electricity, tip top execution CMOS 8-digit microcontroller with 8K bytes of in-shape programmable Blaze memory. The device is synthetic using Atmel's excessive-thickness non capricious reminiscence improvement and is suitable with the business standard direction set and pin out. The on-chip Streak allows the program reminiscence to be remade in-device or by way of a standard non erratic reminiscence programmer. By joining a versatile 8-digit focal processor with in-gadget programmable Blaze on a strong chip, the Atmel AT89S52 is a stable microcontroller which offers an specifically versatile and useful reaction for a few added manage applications. The AT89S52 offers the going with fashionable additives: 8K bytes of Glimmer, 256 bytes of Slam, 32 I/O strains, Guard canine clock, two data guidelines, 3 16-cycle clock/counters, a six-vector -stage smash plan, a full duplex successive port, on-chip oscillator, and clock equipment. In addition, the AT89S52 is organized with static reasoning for movement all the way down to 0 repeat and helps two programming selectable energy saving modes. The Inactive Mode stops the PC processor even as allowing the Smash, clock/counters, successive port, and meddle with machine to work. The Shut down mode saves the Slam substance but freezes the oscillator, impeding any leftover chip limits until the accompanying obstruct or gear reset.

2. **LIQUID CRYSTAL DISPLAY (LCD)**

LCD (Fluid Precious stone Showcase) display is an electronic show module and find a extensive volume of purposes. A 16x2 LCD display is extraordinarily primary module and is typically used in diverse gadgets and circuits. These modules are cherished in extra of 7 segments and other multi segment LEDs. The reasons being: LCDs are functional; effectively programmable; don't have any obstacle of displaying awesome and, incredibly, custom characters (unlike in seven segments), exuberance, and so forth.

A 16x2 LCD infers it can display sixteen characters for each line and there are 2 such lines. In this LCD each man or woman is displayed in 5x7 pixel network. This LCD has registers, especially, Order and Information..

The request register shops the request headings given to the LCD. A request is a direction given to LCD to do a predefined project like imparting it, clearing its display, placing the cursor position, controlling display, and many others The records check in shops the information to be displayed on the LCD. The statistics is the ASCII worth of the man or woman to be displayed on the LCD. Snap to have a look at interior improvement of a LCD.
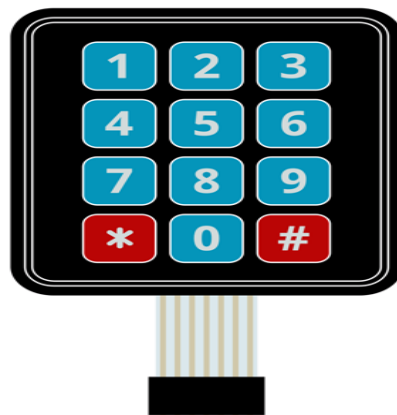
3. Relay Driver IC ULN2003

A Transfer driving force IC is an electro-appealing switch so as to be used every time we actually need to apply a low voltage circuit to show a light Here and there that's associated with 220V mains supply. The normal current to run the alternate twist is extra than may be given by way of numerous composed circuits like Operation Amp, and so on Transfers have exceptional homes and are replaced with solid kingdom switches which are strong than strong state contraptions. High modern limits, ability to stand ESD and force circuit withdrawal are the stand-out houses of Transfers. There are various tactics to using transfers. Of the Hand-off Driver ICs are as underneath.

- High Side Flip Switch Driver.
- Low Side Flip Switch Driver.
- Bipolar NPN Semiconductor Driver.
- N-Channel MOSFET Driver.
- Darlington Semiconductor Driver.
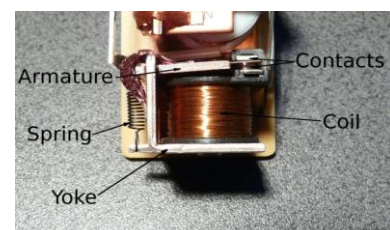- ULN2003 Driver.

4. KEYPAD MATRIX

Rubies! A keypad is maybe the most continuously complicated information contraptions in chip software. In a trendy keypad stressed as a X-Y switch matrix, typically open modifications interface a line to a component when crushed. If a keypad has 12 keys, it's far wired as three areas through four lines. A 16 key pad would have four portions by way of four lines. Some time back, I bought more than one 3×4 layer keypads from eBay. True to shape it's stacked with 0 documentation, correctly it predicted some hours to get to paintings. Regardless the keypad is a super combo of craftsmanship and improvement in with a retail price far under

This little article is expected to help you with getting everything going with your new microcontroller + keypad project so we ought to start. Following figure shows the internal development and pin documentation of the 3×4 keypad used for the assessment. The drawing is the result of a profane proportion of investigation work since I really expected to make a bungle free associate for the endeavor we are chipping endlessly.

5. RELAY

Profoundly, an iron weight which gives a low reluctance way to fascinating progress, a portable iron armature, and someplace around one sport plans of contacts (there are in the exchange imagined). The armature is grew to become to the load and unequivocally associated with no less than one game plans of moving contacts. It is held set up with the aid of a spring with the goal that when the hand-off is de-stimulated there may be an air starting inside the eye-catching circuit. In this condition, one of the two plans of contacts in the hand-off imagined is closed, and the alternative set is open. Various exchanges ought to have quite a lot plans of contacts relying upon their capacity. The hand-off inside the picture in like way has a cord communicating the armature to the burden. This guarantees congruity of the circuit between the transferring contacts on the armature, and the circuit song on the published circuit board (PCB) thru the load, that's welded to the PCB.

ADVANTAGES

- Further develops Lineman wellbeing
- Electrical mishaps can be stayed away from.
- Simple of activity
- Maintenance will be basic
- Diminished over-burdening on conveyance side

APPLICATIONS

- It very well may be involved anyplace in the substation to trip the circuit.
- Generally valuable to work in the public regions.

CONCLUSION

- It can manage a lone given known secret expression.
- The thriller key to work may be changed and machine may be labored beneficially with the modified thriller key.
- No different man or woman can reclose the breaker as soon as the modified thriller secret is given up to machine apart from the person who had changed it.
- It offers no diploma of mystery key taking It is powerful in giving prosperity to the operating group of workers.
- It is slight

- It has a tendency to be effects delivered.

FUTURE SCOPE

Rather than GSM 300 we can utilize GSM 900 which can be associated with IOT (net of things). By the use of IOT encompass we are able to paintings the trades from any region as we can glaringly interface with the server. Far off ultrasonic and Passive Infrared sensors may be in like manner used.
We can utilize the SCADA framework, to help easy difficulty with shooting, to apprehend the difficulty location straightforwardly and line guy can with out tons of a stretch correct it. We can likewise make use of EPROMS that can be related to framework so the electric switch can't work from the substation, yet additionally from other place thru far off correspondence.

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