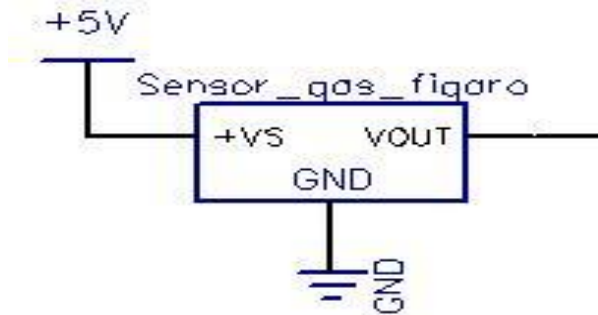
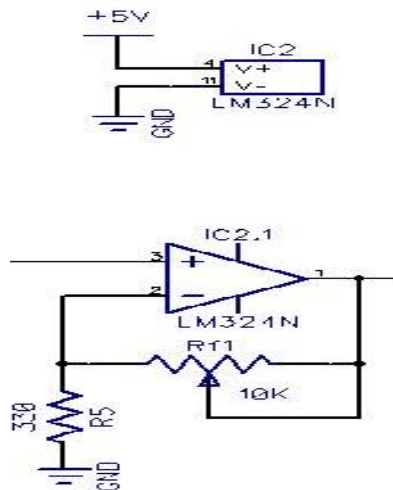


LAMPIRAN 1

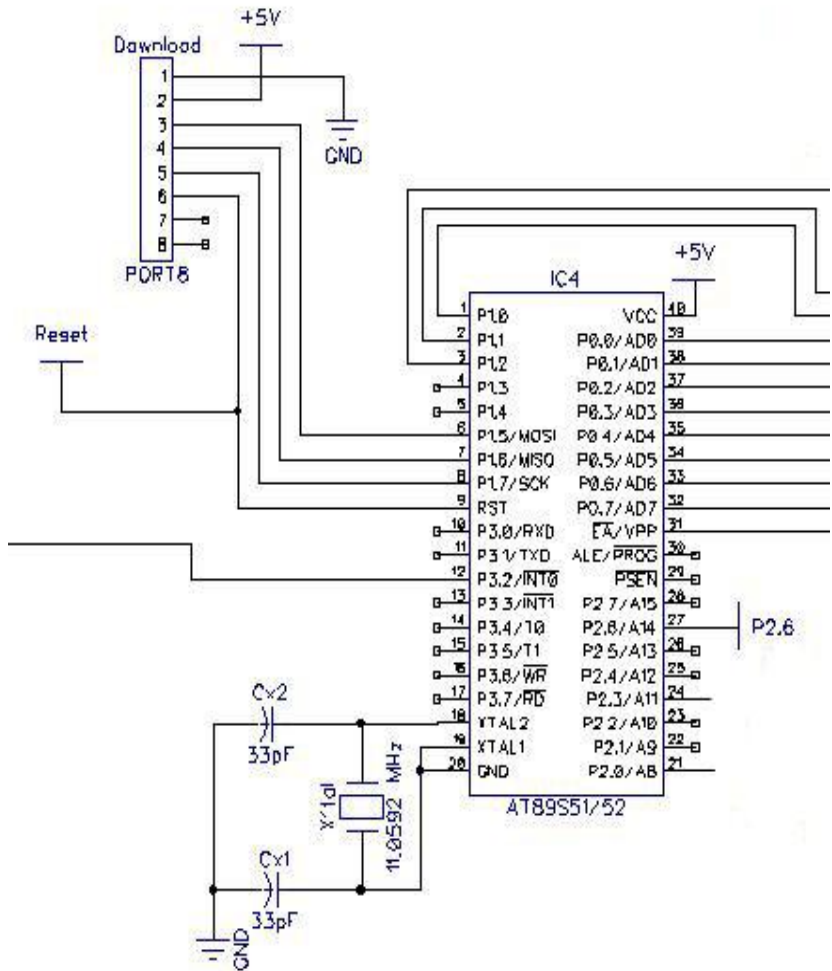
Rangkaian Sensor



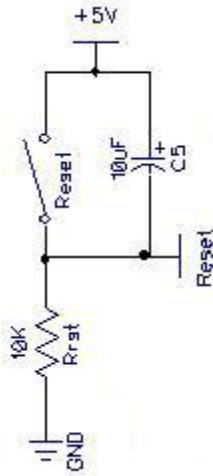
Penguat Op-Amp



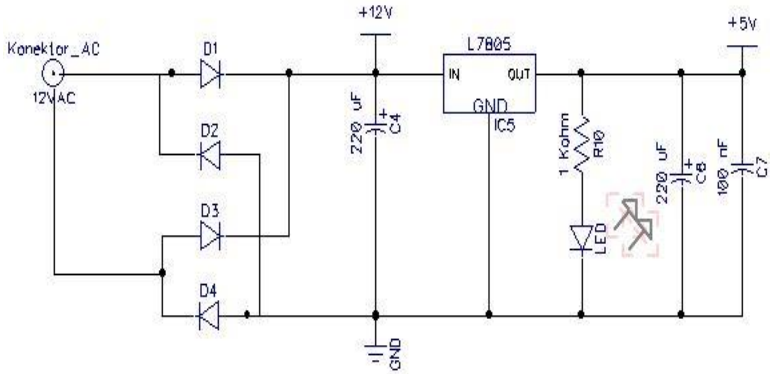
Sistem Minimum Mikrokontroler



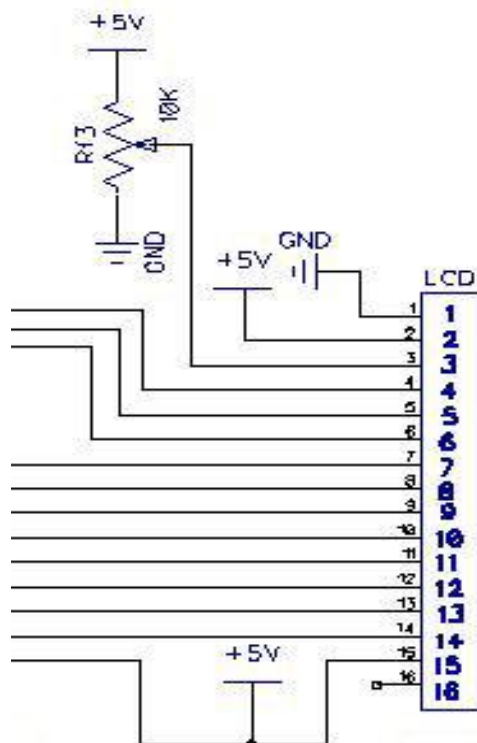
Rangkaian Reset



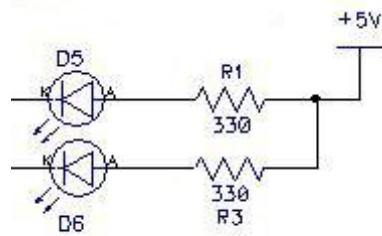
Rangkaian Regulator



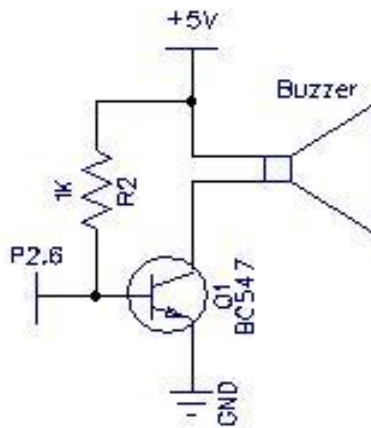
Rangkaian Output LCD



Rangkaian Output LED

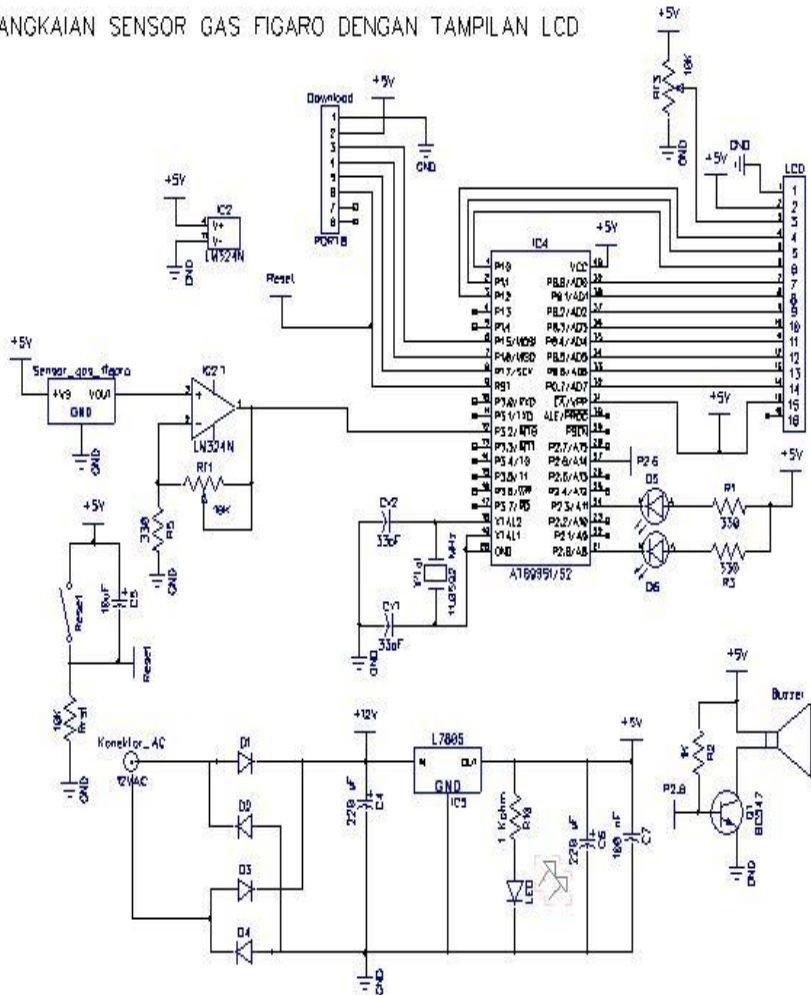


Rangkaian Output Buzzer



Rangkaian Keseluruhan alat

RANGKAIAN SENSOR GAS FIGARO DENGAN TAMPILAN LCD

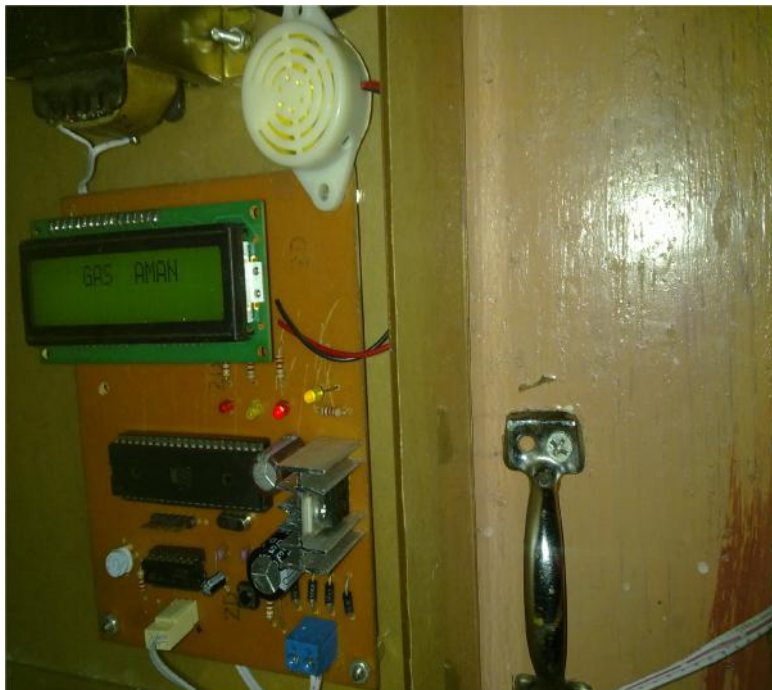


LAMPIRAN 2

Contoh kotak tempat penyimpanan tabung gas, untuk pengguna rumah tangga.



Gambar letak alat yang ditempel disisi kotak.

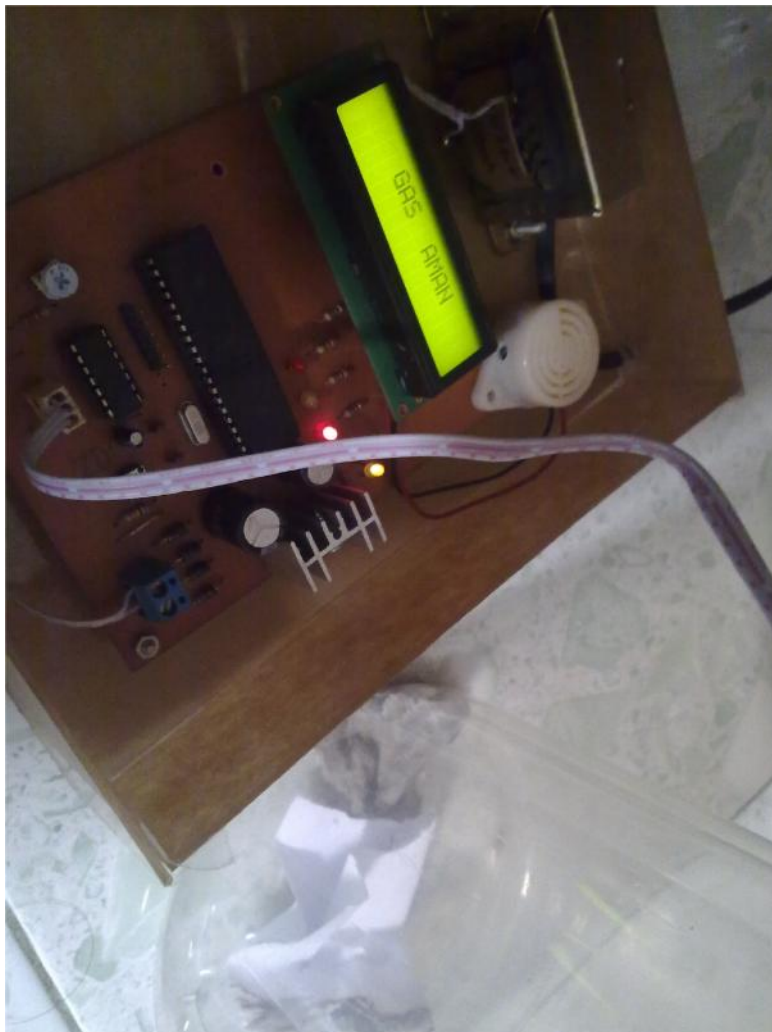


LAMPIRAN 3

Percobaan sensor terhadap asap dengan pembakaran kertas dalam toples.



Hasil percobaan bahwa sensor hanya dapat mendeteksi gas yang mudah terbakar.



LAMPIRAN 4

Pemrogramannya.

```
org 0h
    rs    bit p1.2
    rw    bit p1.1
    e     bit p1.0
    led1  bit p2.0
    led2  bit p2.3
    buzzer bit p2.6
    sen_gas bit p3.2
    data_lcd equ p0

    setb led1
    setb led2
    clr buzzer
    mov r0,#0
start:
    call delay
    call init_LCD
    mov a,#80h
    call command
    mov dptr,#pesan1
    call tulisan
    mov a,#0c0h
    call command
    mov dptr,#pesan2
    call tulisan
```

```

call timer
mov a,#80h
call command
mov dptr,#pesan3
call tulisan
mov a,#0c0h
call command
mov dptr,#pesan4
call tulisan
call timer
clr led1
mov a,#01h
call command
loop:
mov a,#80h
call command
mov dptr,#pesan7
call tulisan
mov a,#0c0h
call command
mov dptr,#pesan8
call tulisan
clr led1
setb led2
cek_gas:
jb sen_gas,loop
mov a,#80h
call command

```

```
mov dptr,#pesan5
call tulisan
mov a,#0c0h
call command
mov dptr,#pesan6
call tulisan
```

```
setb led1
clr led2
```

```
setb buzzer
call timer
clr buzzer
call delay
sjmp cek_gas
```

tulisan:

```
mov r4,#16
```

sentence:

```
clr a
movc a,@a+dptr
call char
inc dptr
djnz r4,sentence
ret
```

init_lcd:

```
MOV A,#38H
```

```
call command
MOV A,#01H
call command
MOV A,#0CH
call command
RET
```

command:

```
clr rw
clr rs
mov data_lcd,a
setb e
call delay
clr e
ret
```

char: setb rs

```
mov data_lcd,a
setb e
call delay
clr e
ret
```

timer: mov r5,#05h

timer1: mov r6,#0ffh

timer2: mov r7,#0ffh

```
djnz r7,$
```

```
djnz r6,timer2
```

xxx

```
    djnz r5,timer1
    ret
delay: mov r7,#150
dla: mov r6,#150
    djnz r6,$
    djnz r7,dla
    ret
```

```
pesan1: DB ' RANGKAIAN '
pesan2: DB ' MIKROKONTROLER '
pesan3: DB ' PENDETEKSI '
pesan4: DB ' KEBOCORAN GAS '
pesan5: DB ' BAHAYA!!! '
pesan6: DB ' GAS BOCOR '
pesan7: DB ' GAS AMAN '
pesan8: DB ' '
end
```