

# **LAMPIRAN**

## Source Code Program

```
#include <mega16.h>

#include <delay.h>

#include <stdio.h>

#asm

.equ __lcd_port=0x15 ;PORTC

#endasm

#include <lcd.h>

unsigned int cycle;

int i;

char yeah[33];

float siklus,waktutempuh; //detik

float xtall=1200000;

float prescaller=64; //prescaller yang di pilih

float jarak;

interrupt [TIM0_OVF] void timer0_ovf_isr(void)

{
```

```
cycle++;
```

```
}
```

```
unsigned int ping(void){
```

```
    DDRA.0 = 1;
```

```
    PORTA.0 = 0;
```

```
    delay_us(2);
```

```
    PORTA.0 = 1;
```

```
    delay_us(5);
```

```
    PORTA.0 = 0;
```

```
    DDRA.0 = 0;
```

```
    while(PINA.0==0){ }
```

```
    TCNT0 = 0x00;
```

```
    cycle = 0;
```

```
    while(PINA.0==1){ }
```

```
    return (cycle * 256 + TCNT0);
```

```
}
```

```
void main(void)
```

```
{
```

```
    TIMSK = 0x01;
```

```
TCCR0 = 0x03;
```

```
ACSR = 0x80;
```

```
SFIOR = 0x00;
```

```
lcd_init(16); //lcd baca 16 karakter
```

```
PORTB = 0x00;
```

```
DDRB = 0xff;
```

```
    lcd_gotoxy(0,0);
```

```
    lcd_putsf(" AKHPPC ");
```

```
#asm("sei")
```

```
while (1)
```

```
{
```

```
    i=ping();
```

```
        siklus=(float)prescaller/xtall;
```

```
        waktutempuh=(float)siklus*i/2;
```

```
        jarak=(float)waktutempuh*340*100;
```

```

lcd_gotoxy(0,0);

lcd_putsf("  KOKA  ");

lcd_gotoxy(0,1); //hapus

sprintf(yeah,"  %f mm  ",jarak); //jangan di hapus

lcd_puts(yeah); //jangan di hapus

delay_ms(400);

if(jarak <130.000000 && jarak >115.000000) //deteksi jarak gelas gelas
{

  PORTB = 0b0000001; //heater ON

  delay_ms(50000); //untuk mengganti delay 1000ms sama dengan 1
detik

  delay_ms(50000);

  delay_ms(50000);

  delay_ms(50000);

  PORTB = 0b00000010; //tuang susu

  delay_ms(5000);

  PORTB = 0b00000000; //tuang susu

  delay_ms(100);

  PORTB = 0b00000100; //tuang air

  delay_ms(8000);

  PORTB = 0b00000000;

```

```
delay_ms(1000);
```

```
}
```

```
else
```

```
{PORTB = 0b00000000;} //berhenti dan looping ke atas kembali
```

```
}
```

```
}
```