

18_PotDisplay

;Conversione dei 10 bit contenuti in ADRESH (2 bit) e ADRESL (8 bit)
;allineamento a sinistra, su tre registri in BCD, 4 bit su ciascun registro,
;CENTINAIA, DECINE E UNITA.
;risultato conversione su PORTD (display) e PORTC (barra led)

```
List      P=PIC16F887
Include   "p16F887.inc"
ERRORLEVEL -302
```

```
__config 0x2007, 0x20E4 ;0010 0000 1110 0100
__config 0x2008, 0x3EFF ;0011 1110 1111 1111
```

```
CENTINAIA EQU 0x20
DECINE     EQU 0x21
UNITA      EQU 0x22
TEMP       EQU 0x23
COUNT_L   EQU 0x24
COUNT_H   EQU 0x25
```

```
ORG 0x00
GOTO BEGIN
```

```
BEGIN      BSF      STATUS,RP0      ; Banco1
           BCF      STATUS, RP1
           MOVLW    B'11111111'      ;
           MOVWF    TRISA             ;PORTA tutte ingressi
           MOVLW    B'00000000'      ;solo RA0, Vref interne
           MOVWF    ADCON1
           MOVLW    B'00000000'
           MOVWF    TRISC            ;PORTC tutte uscite
           MOVLW    B'00000000'
           MOVWF    TRISD            ;PORTD tutte uscite
           BANKSEL  ANSEL
           MOVLW    B'00000010'      ;RA1 analogico
           MOVWF    ANSEL
           BANKSEL  ADCON0
           MOVLW    B'01000101'      ;
           MOVWF    ADCON0
           MOVLW    0x30
           MOVWF    COUNT_L          ; Ricarica COUNT_L
           MOVWF    COUNT_H          ; Ricarica COUNT_H
```

```
.*****
,
```

```
NOP
NOP
NOP
NOP
BSF      ADCON0,1      ;inizializza la conversione
```

		18_PotDisplay	
CONVER	BTFSC GOTO	ADCON0,1 CONVER	;aspetta che finisca la conversione
	CLRF CLRF CLRF CLRF	CENTINAIA DECINE UNITA TEMP	
	BANKSEL MOVF MOVWF BCF MOVWF	ADRESH ADRESH, 0 PORTC STATUS, RP0 TEMP	
CONTA1	ADDLW BTFSS GOTO MOVWF INCF GOTO	B'10011100' STATUS, C CONTA2 TEMP CENTINAIA , 1 CONTA1	; W - 100D ; Salta se non c'è riporto, cioè ; se W > 100 decimale ; salva il resto in TEMP
CONTA2	MOVF ADDLW BTFSS GOTO MOVWF INCF GOTO	TEMP, 0 B'11110110' STATUS, C FINE TEMP DECINE, 1 CONTA2	; ripristina in resto da TEMP a W ; W - 10D ; Salta se non c'è riporto, cioè ; se W > 10 decimale ; salva il resto in TEMP
FINE	MOVF MOVWF	TEMP, 0 UNITA	; ripristina in resto da TEMP a W

.*****
,
;RISULTATO VISUALIZZATO SUI DUE DISPLAY DI PORTD

MOVF CALL MOVWF CALL	CENTINAIA, 0 TABLE_DECINE PORTD DELAY10MS
MOVF CALL MOVWF CALL	DECINE, 0 TABLE_UNITA PORTD DELAY10MS
GOTO	BEGIN

.*****
,

```

                                18_PotDisplay
TABLE_DECINE    ADDWF    PCL,1        ;
                RETLW    B'00000011'    ;0
                RETLW    B'111110011'    ;1
                RETLW    B'00100101'    ;2
                RETLW    B'00001101'    ;3
                RETLW    B'10011001'    ;4
                RETLW    B'01001001'    ;5
                RETLW    B'01000001'    ;6
                RETLW    B'00011111'    ;7
                RETLW    B'00000001'    ;8
                RETLW    B'00001001'    ;9

TABLE_UNITA     ADDWF    PCL,1        ;
                RETLW    B'00000010'    ;0
                RETLW    B'111110010'    ;1
                RETLW    B'00100100'    ;2
                RETLW    B'00001100'    ;3
                RETLW    B'10011000'    ;4
                RETLW    B'01001000'    ;5
                RETLW    B'01000000'    ;6
                RETLW    B'00011110'    ;7
                RETLW    B'00000000'    ;8
                RETLW    B'00001000'    ;9

DELAY10MS       DECFSZ    COUNT_L,1    ; Decrementa COUNT_L, salta se zero
                GOTO      DELAY10MS
                MOVLW     0x30
                MOVWF     COUNT_L      ; Ricarica COUNT_L
                DECFSZ    COUNT_H,1    ; Decrementa COUNT_H, salta se zero
                GOTO      DELAY10MS
                MOVLW     0x30
                MOVWF     COUNT_L      ; Ricarica COUNT_L
                MOVWF     COUNT_H      ; Ricarica COUNT_H
                RETURN

END

```