CodeLock 10b

CodeLock 10b electronic lock is realised with Atmel AVR micro-controller ATtiny2313.

If the code is entered in the correct sequence, then after 1 second the relay and the electric striker (in the door) switch on for 1 second and then switch off again.

User code can be changed via 3x4 matrix keypad. Keypad has 12 keys, that are wired in a matrix.
Initial user code (0000 0000) is set up with a jumper S1. The jumper must be removed after 2 beeps.

Signaling

Each pressed key is immediately confirmed with one short beep.
Two beeps follow after entering the right user code.
Eight short beeps appear when entering the wrong user code.
The keypad is blocked for 60 seconds after 3 incorrect entries.
User code is retained even in the event of a power failure
You can use a LED diode instead of a Beeper. Look at the code lock electric circuit diagram.

YOU CAN ORDER

Programmed micro-controller (8 user codes - 1 to 9 digits) ATtiny2313 = 12 EUR.

Programmed micro-controller (30 user codes - 1 to 9 digits) ATtiny2313 = 20 EUR.

http://www.avr.4mg.com

In short: (8 or 30 user codes - 1 to 9 digits) => CodeLock 10b–8 or CodeLock 10b–30

Each user code (from No1 to No7) can be erased via keypad by changing the user code to 0000.
A User code No0 is erased with a Jumper S1. The user code No0 is set up to a value 0000 0000.
The user code No0 is set up to a value **0000 0000** with a Jumper S1.

1. Set the Jumper S1 and then press the key **#**
2. Remove the Jumper S1 after 2 beeps.

1. OPENING (For the first time): **0000 0000 #**
The relay is being activated for 1 second.

2. CHANGING **CODE No0** (For the first time): *** 0 0000 0000 # 550 660 #**
For opening the door press: **550 660 #**
The relay is being activated for 1 second.

3. WRITTING (CHANGING) THE CODES **No1 – No7 (or No30)**: *** _ Code0 # Code_ #**
Example 1: *** 1 550 660 # 660 810 #**
Two short beeps indicate that new user code No**1** is written.
For opening the door press: **660 810 #**
The relay is being activated for 1 second.

4. WRITTING (CHANGING) THE CODES **No2**
Example 2: *** 2 550 660 # 660 820 #**
Two short beeps indicate that new user code No**2** is written.
For opening the door press: **660 820 #**
The relay is being activated for 1 second.

5. WRITTING (CHANGING) THE CODES **No3**
Example 3: *** 3 550 660 # 660 830 #**
Two short beeps indicate that new user code No**3** is written.
For opening the door press: **660 830 #**
The relay is being activated for 1 second.

6. WRITTING (CHANGING) THE CODES **No4**
Example 4: *** 4 550 660 # 660 840 #**
Two short beeps indicate that new user code No**4** is written.
For opening the door press: **660 840 #**
The relay is being activated for 1 second.

7. WRITTING (CHANGING) THE CODES **No5**
Example 5: *** 5 550 660 # 660 850 #**
Two short beeps indicate that new user code No**5** is written.
For opening the door press: **660 850 #**
The relay is being activated for 1 second.

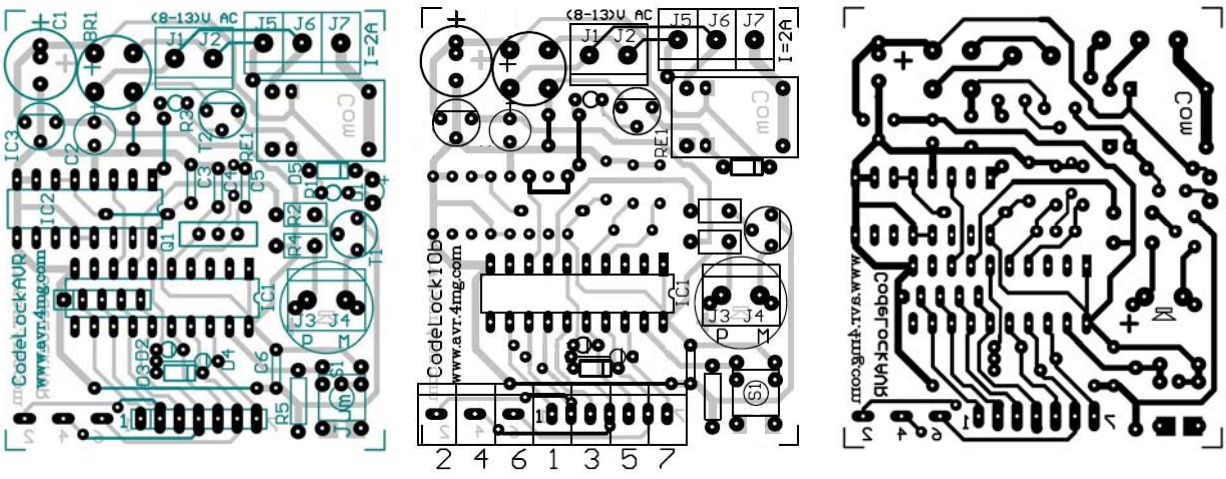
8. WRITTING (CHANGING) THE CODE **No6**
Example 6: *** 6 550 660 # 660 860 #**
Two short beeps indicate that new user code No**6** is written.
For opening the door press: **660 860 #**
The relay is being activated for 1 second.

9. WRITTING (CHANGING) THE CODE **No7**
Example 5: *** 7 550 660 # 660 870 #**
Two short beeps indicate that new user code No**7** is written.
For opening the door press: **660 870 #**
The relay is being activated for 1 second.

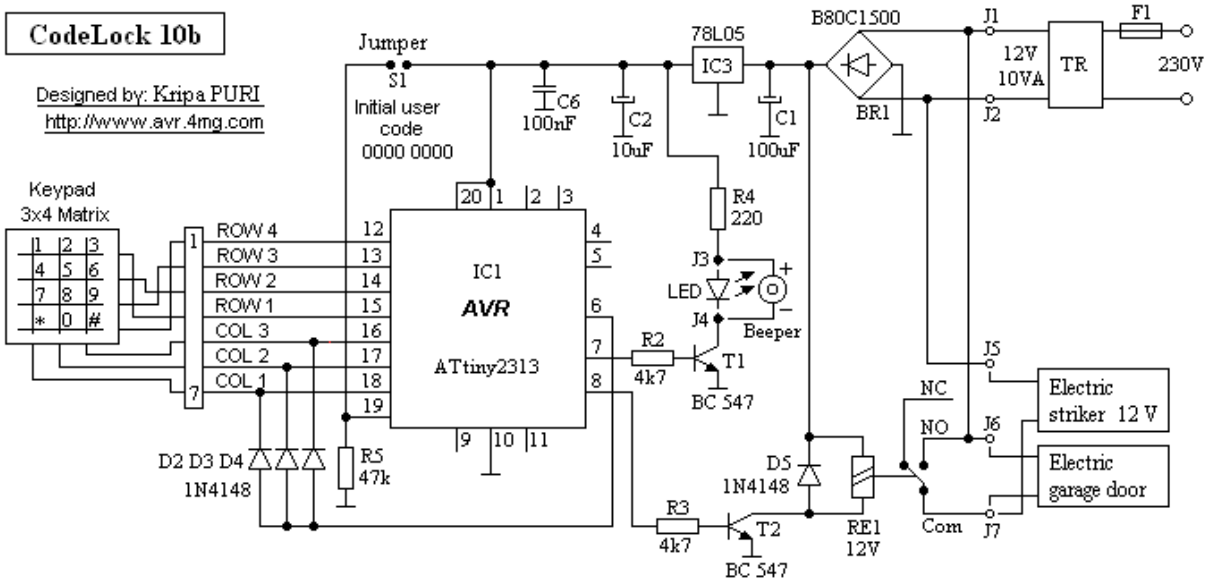
10. ERASING (DELETING) THE CODE **No1**
Example 6: *** 1 550 660 # 0000 #**
Two short beeps indicate that the user code No**1** is erased (deleted).

11. ERASING (DELETING) THE CODE **No7**
Example 7: *** 7 550 660 # 0000 #**
Two short beeps indicate that the user code No**7** is erased (deleted).

12. The time when the relay is being activated can be changed via keypad.
Example 8: *** 9 (or 31) 550 660 # 3 #** => The relay will be activated for 3 seconds.



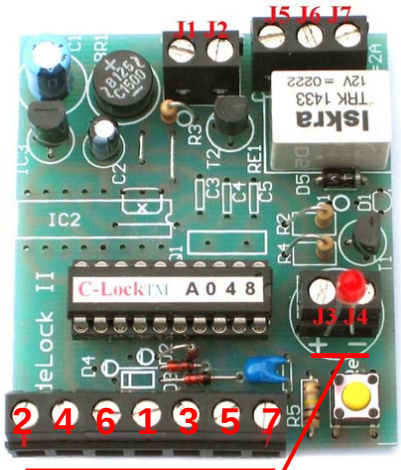
An electric circuit diagram

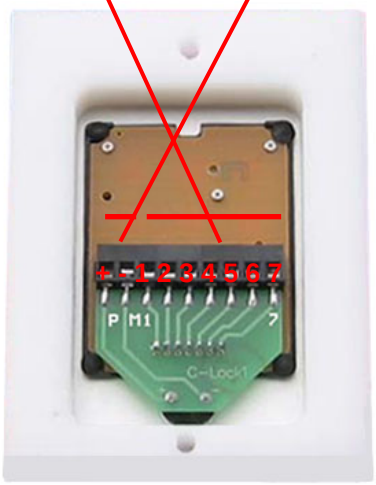


A list of used elements

Piece	Typ	Value	Reference
1	resistor	220 Ω	R4
2	resistor	4,7 kΩ	R2, R3
1	resistor	47 kΩ	R5
1	el. capacitor	100 uF / 35 V	C1
1	el. capacitor	10 uF / 35 V	C2
1	capacitor	100 nF ML	C6
2	transistor NPN	BC 547 C	T1, T2
4	diode	1N 4148	D2, D3, D4, D5
1	greatz	B80C1500	BR1
1	microcontroller	ATtiny2313	IC1
1	IC socket	20 PIN	IC1
1	IC	78L05	IC3
1	relay	12 V DC	RE1
1	transformer toroidal	230 V / 12V / 10VA	TR
1	beeper or LED diode	SEP 2240	Beeper or LED
7	pcb terminal block	Pitch 5,08 mm	J1 to J6
7	pcb terminal block	Pitch 5,08 mm	1 do 7
1	jumper or pcb key	6 x 6 mm	S1 Jumper
1	keypad, 3 x 4 matrix	(86 x 115 x 15) mm	
1	housing	(130 x 90 x 60) mm	
1	pcb	(50 x 55) mm	www.avr.4mg.com
1	electric striker	NUOVA-FEB, KVF, effeff	electric door striker, voltage 12V

CodeLock 10b, assembled





Keypad