

CodeLock 8051



CodeLock 8051 electronic code lock is realised with **Atmel 8051 micro-controller AT89C2051**.

1 user code is consisted of 1 to 4 digits and entered with #.
User code can be set in the bascom program (source code).
(program **code11eng.bas**).

1 user code is consisted of 1 to 4 digits and entered with #.
User code can be changed via 3x4 matrix keypad (program **code11-1.hex**)

8 user codes are consisted of 1 to 8 digits and entered with #.
User code can be changed via 3x4 matrix keypad (program **code11-2.hex**)

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 2 seconds and then switch off again.

Initial user code **1234** is set up with a key S1-Reset.

1. Press a key (#) for a moment.
2. Press and hold the key S1-Reset for more than 5 seconds.
3. Release the key S1-Reset after 2 beeps.

User code 2, 3, 4, 5, 6, 7 and 8 can be erased via keypad by changing the user code to **0**.

Signaling

Each pressed key is immediately confirmed with one short beep. Two short beeps follow after entering the right user code. Ten short beeps appear when entering the wrong user code.

The keypad is blocked for 60 seconds for three incorrect entries.

User codes are retained (in the EEPROM 24C02) 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

Specifications:

Power supply 12 V DC or AC – 10VA; **Consumption** 4 mA in stand by, max. 35 mA for relay switched on; 100 millions code combinations; Relay switching contacts: Single pole changeover 2 A/24 V DC, 1 A/125 V AC; Contacts for Electric striker - 12 V AC or DC

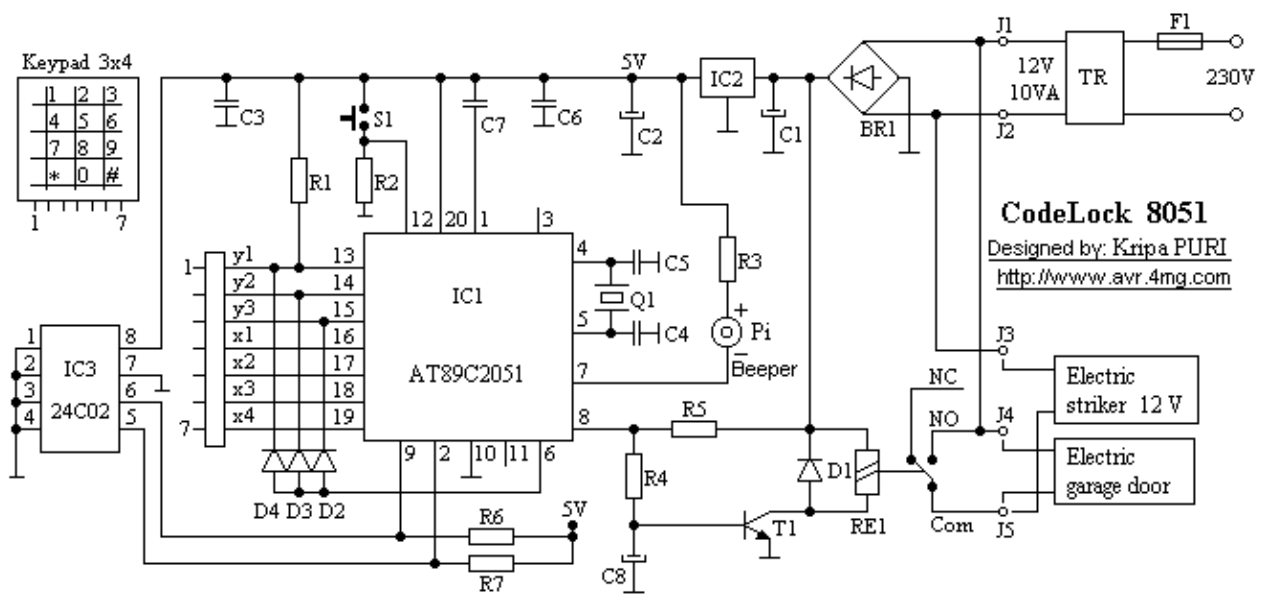
In short: (1 user code - 1 to 4 digits) => program code11-1.hex

1. OPENING (For the first time): **1234 #**
The relay is being activated for 2 seconds.
2. WRITING **YOUR CODE** (For the first time): *** 1234 # 55 66 #**
Two short beeps indicate that new user code is written.
For opening the door press: **55 66 #**
The relay is being activated for 2 seconds.
3. CHANGING THE CODE: *** OldCode # NewCode #**
Example: *** 55 66 # 66 88 #**
Two short beeps indicate that new user code is written.
For opening the door press: **66 88 #**
The relay is being activated for 2 seconds.

In short: (8 user codes – 1 to 8 digits) => program code11-2.hex

- 1. OPENING (For the first time): 1 2 3 4 #**
The relay is being activated for 2 seconds.
- 2. CHANGING THE CODE No1: * UserNo OldCode1 # NewCode1 #**
Example: * 1 1 2 3 4 # 450 950 #
Two short beeps indicate that new user code1 is written.
For opening the door press: 450 950 #
The relay is being activated for 2 seconds.
- 3. WRITING (CHANGING) THE CODE No2 – No8: * UserNo Code1 # Code2 #**
Example: * 2 450 950 # 44 55 99 00 #
Two short beeps indicate that new user code2 is written.
For opening the door press: 44 55 99 00 #
The relay is being activated for 2 seconds.
- The time when the relay is being activated can be changed by the user.
e.g. * 9 1 2 3 4 # 3 # => The relay will be activated for 3 seconds.

Electric circuit diagram



A list of used elements

Piece	Typ	Value	Reference
2	Resistor	47 k Ω	R1, R2
3	Resistor	10 k Ω	R5, R6, R7
1	Resistor	220 Ω	R3
1	Resistor	4,7 k Ω	R4
1	El. capacitor	100 uF / 35 V	C1
2	El. capacitor	22 uF	C2, C8
2	Capacitor	100 nF ML	C3, C6
1	Capacitor	470 nF ML	C7
2	Capacitor	27 pF	C4, C5
1	Quartz	4 MHz	Q1
1	Transistor NPN	BC 547 or sim.	T1
4	Diode	1N 4148	D1, D2, D3, D4
1	Bridge	B80C1500	BR1
1	Micro-controller	AT89C2051	IC1
1	IC socket	20 PIN	IC1
1	IC	78L05	IC2
1	EEPROM	24C02	IC3
1	IC socket	8 PIN	IC3
1	Relay	12V DC	RE1, ISKRA TRK 1433
1	Beeper or Red LED	SEP 2240	Pi
1	PCB key	6 x 6 mm	S1
5	Terminal block	Pitch 5,08 mm	For PCB
7	Terminal block	Pitch 2,54 mm	For PCB and Keypad
1	Keypad	(86 x 115 x 15) mm	3 x 4 matrix
1	Housing	(76 x 105 x 38) mm	
1	Transformer or Adapter	230 V / 12V / 10VA	TR
1	Fuse	F250 / 100mA	F1
1	PCB	(54 x 56) mm	www.avr.4mg.com
1	Door striker	12V AC	Electric striker

An assembly outline

