

## CodeLock AVR LT

CodeLock AVR LT electronic lock is realised with Atmel AVR micro-controller AT90S2313 or ATtiny2313.

**1 user code** in the program **codeLCDLT.hex** (AT90S2313) or **codeLCDtinyLT.hex** (ATtiny2313) is consisted of 1 to 8 digits.



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.

User code can be changed via **3x2 matrix keypad**. Keypad has 6 keys, that are wired in a matrix.

**Initial user code (1230)** is set up with a jumper. The jumper must be inserted before the voltage (12V) connection. The jumper must be removed after 2 beeps.

**LCD display is an option!**



### Signaling

Each pressed key is immediately confirmed with one short beep.

Two short beeps follow after entering the right user code. One long beep appears when entering the wrong user code.

The keypad is blocked for 20 seconds for each incorrect entry.

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 (for the CodeLock AVR):

Programmed micro-controller (1 user code - 1 to 9 digits - LCD is on) ATtiny2313 = 12 EUR.

Programmed micro-controller (8 user codes - 1 to 9 digits - LCD is on) ATtiny2313 = 19 EUR.

Programmed micro-controller (30 user codes - 1 to 9 digits - LCD is off) ATtiny2313 = 19 EUR.

For DIY version of CodeLock AVR (all elements are included) contact via e-mail.

**e-mail:** [kripa.puri@avr.4mg.com](mailto:kripa.puri@avr.4mg.com)

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

Information about **40 user codes** version **C-Lock 3000** connected to a **PC** (via e-mail).

**In short:** (1 user code - 1 to 8 digits) => CodeLock AVR LT

1. OPENING (For the first time): **1230 #**  
The relay is being activated for 2 seconds.
2. WRITING **YOUR CODE** (For the first time): **\* 1230 # 223310 #**  
For opening the door press: **223310 #**  
The relay is being activated for 2 seconds.
3. CHANGING THE CODE: **\* OldCode # NewCode #**  
Example: **\* 223310 # 32132100 #**  
Two short beeps indicate that new user code is written.  
For opening the door press: **32132100 #**  
The relay is being activated for 2 seconds.

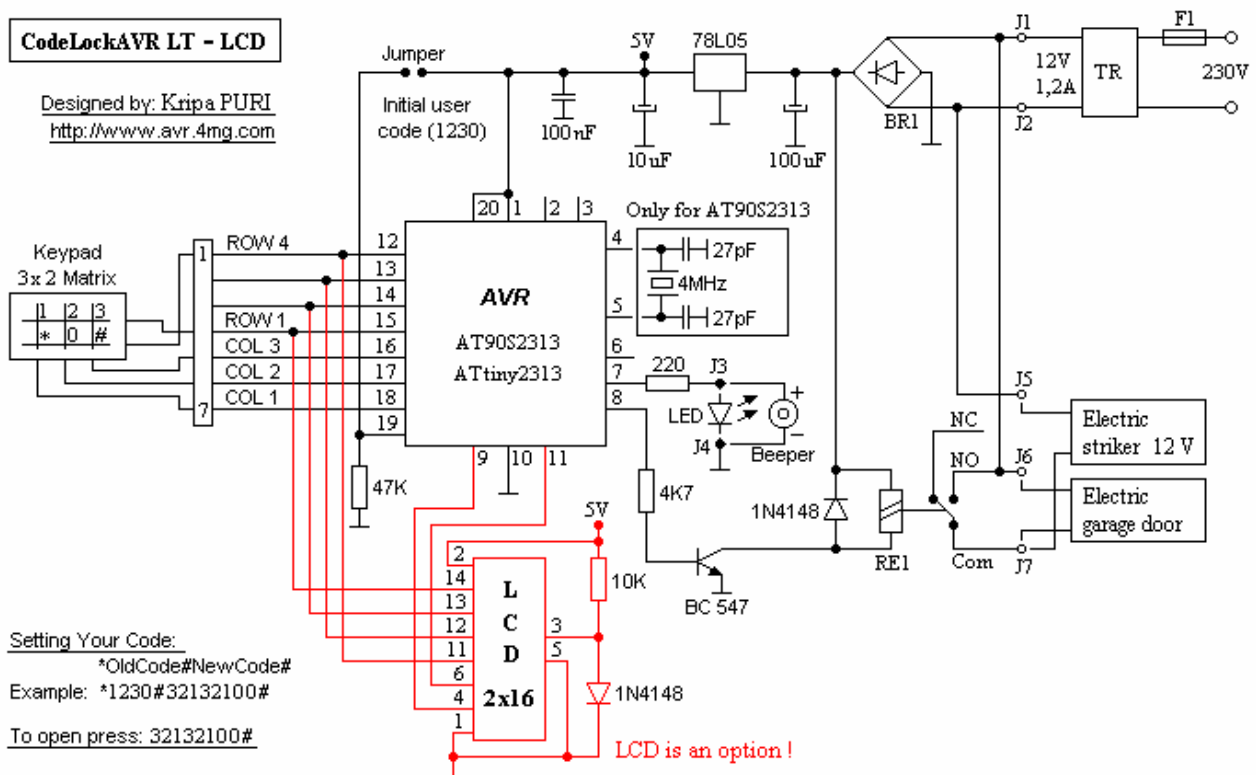
**In short:** (8 or 30 user codes - 1 to 9 digits) => CodeLock AVR – 8 or 30

1. OPENING (For the first time): **1234 #**  
The relay is being activated for 1 second.
2. CHANGING **CODE No1** (For the first time): **\* 1 1234 # 550 660 #**  
For opening the door press: **550 660 #**  
The relay is being activated for 1 second.
3. WRITING (CHANGING) THE CODE **No2 – No8 (or 30)**: **\* \_ Code1 # Code\_ #**  
Example: **\* 5 550 660 # 660 880 #**  
Two short beeps indicate that new user code No5 is written.  
For opening the door press: **660 880 #**  
The relay is being activated for 1 second.
4. The time when the relay is being activated can be changed via keypad.  
Example: **\* 9 (or 31) 550 660 # 3 #** => The relay will be activated for 3 seconds.

**Initial user code 1234** is set up with a Jumper.

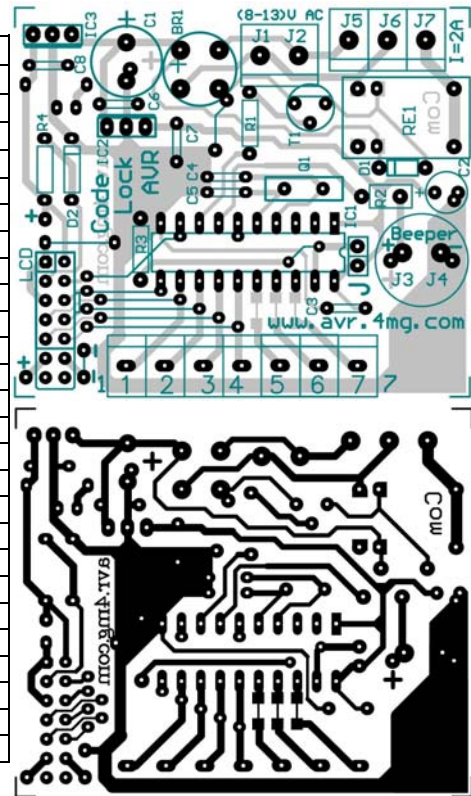
1. Insert the Jumper and then connect power supply (12V AC)
2. Remove the Jumper after 2 beeps.

**Each user code can be erased** via keypad by changing the user code to 0000.

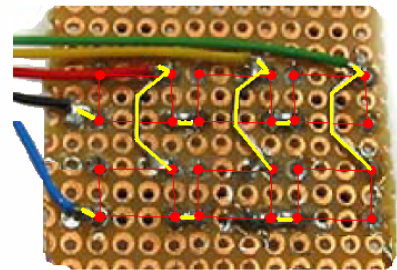
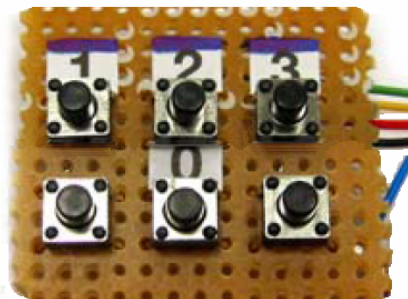
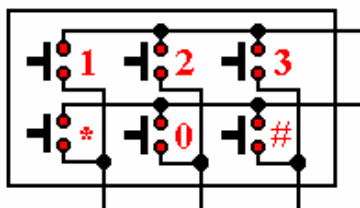
**Electric circuit diagram**

### A list of used elements

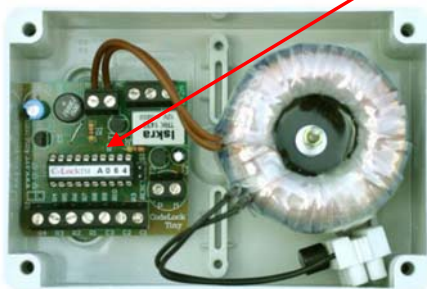
Pie.	Typ	Value	Reference
1	Resistor	220 Ω	R2
1	Resistor	4,7 KΩ	R1
1	Resistor	47 kΩ	R3
1	Resistor	10 kΩ	R4
1	Capacitor	100 uF / 35 V	C1
1	Capacitor	10 uF / 35 V	C2
2	Capacitor	27 pF	C4, C5 (AT90S2313)
1	Quartz	4 MHz	Q1 (AT90S2313)
4	Capacitor	100 nF ML	C3, C6, C7, C8
1	Tranzistor NPN	BC 547	T1
2	Diode	1N 4148	D1, D2
1	Bridge	B80C1000	BR1
1	Micro-controller	ATtiny2313, AT90S2313	IC1
1	IC socket	20 PIN	IC1
1	IC	78L05	IC2
1	Relay	12 V DC	RE1
1	Transformer	230 V / 12V / 10VA	TR
1	Beeper or LED diode	SEP 2240 or RED led	Beeper, LED
21	Terminal block	Pitch 5,08 mm	J1, J2, J3 ...
1	Jumper	Pitch 2,54 mm	Jumper, J
1	Keypad, 3 x 4 matrix	(86 x 115 x 15) mm	Keypad
1	Housing	(130 x 90 x 60) mm	
1	LCD Display	16 x 2 (HD44780)	
1	LCD Connector, 14pin	Male & Female	LCD
1	TIV	(51 x 60) mm	<a href="http://www.avr.4mg.com">www.avr.4mg.com</a>
1	Electric striker	NUOVA-FEB, KVF	Electric striker



### Keypad 3 x 2 Matrix



### Assembled PCB with ATtiny2313



FTP cable  
8 wires +  
shield  
wire

