AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY

Documentation of the student project

ALICE’s subsystem

Design Laboratory

Elektronika PL, III year

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1. The aim of the project

The aim of project was to create some solution for bigger project(ALICE)'s needs.
These needs were cooling and remote turning on/off system.

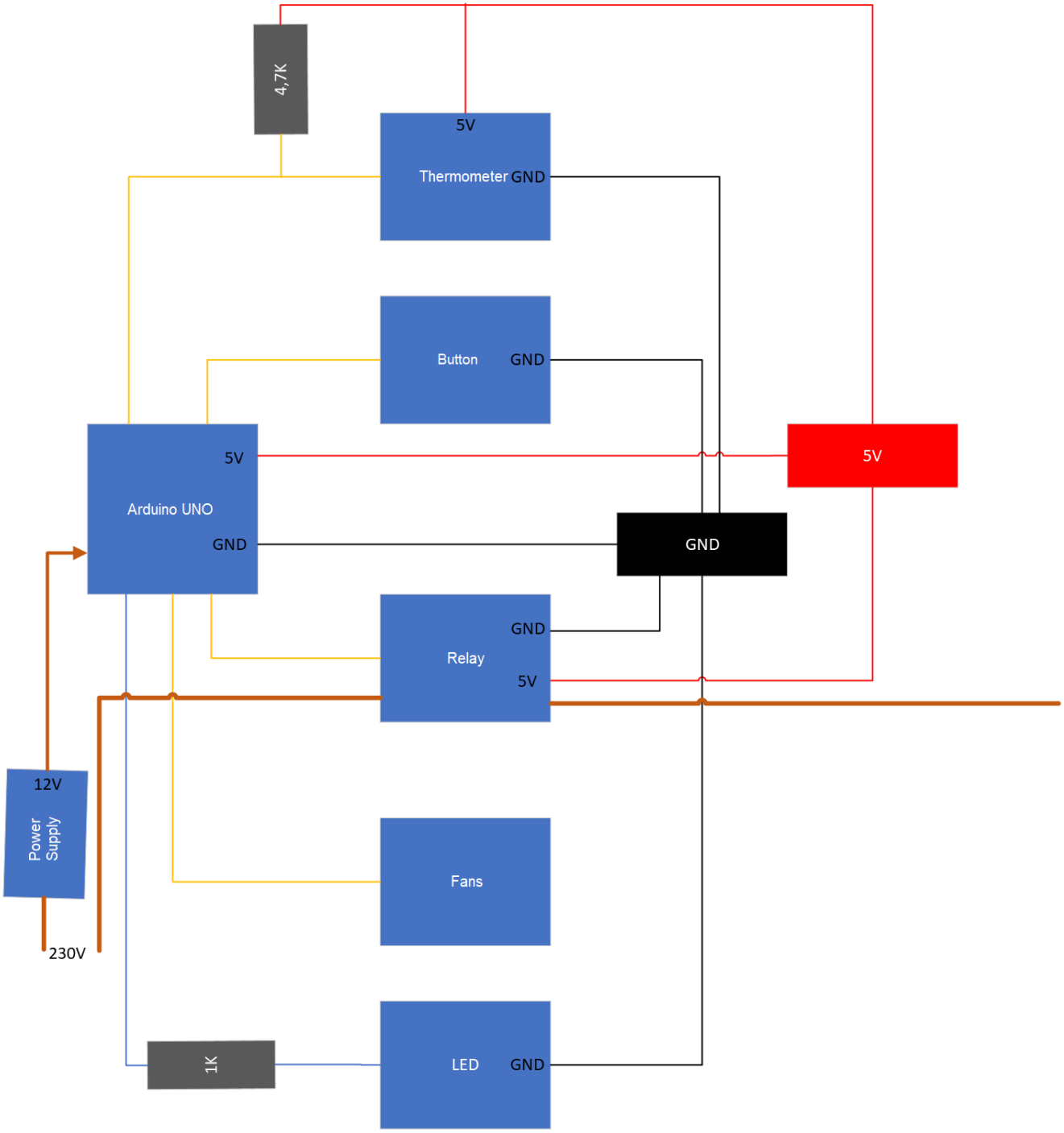
The project assumptions are:

- creating wooden case for the ALICE project’s module and subsystem’s peripherials
- programming cooling system
- programming power system

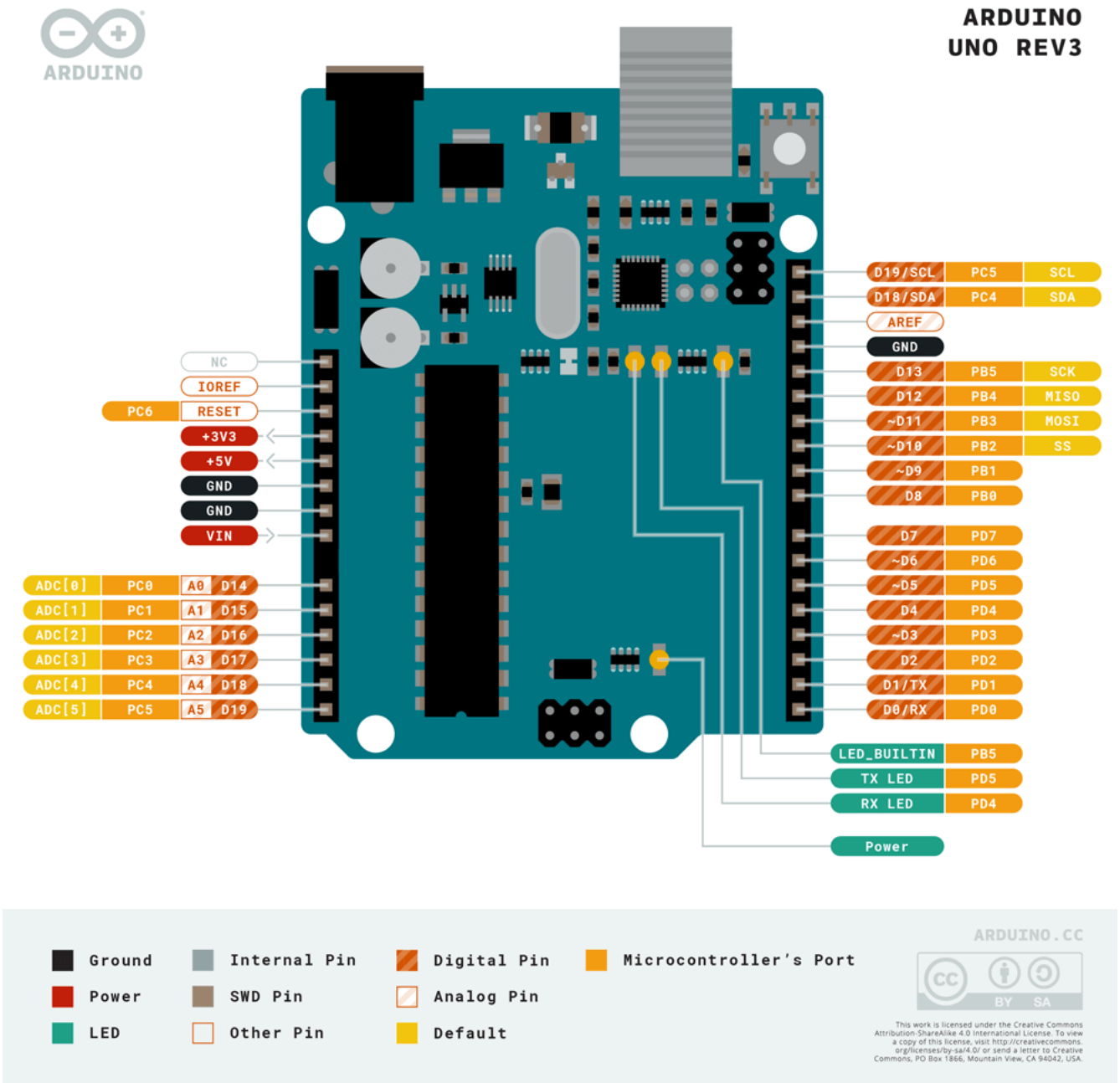
2. Resources and tools

Type	Name	Description
Main unit	Arduino Uno	The main operational unit programmed in arduino c language.
Temperature sensors	DS18B20 one wire	Constantly measuring the temperature of the ALICE module’s radiator. Measurement is recived by main unit.
Relay	1-channel Relay module 5V 10A@250VAC	Provides abillity to turn on/off power supply with main unit’s code.
Button	Monostable tact switch	Turns system on/off
Fans	Typical computer CPU’s fan	Constantly turned on simultaneously with ALICE’s module. It is possible to control its speed with main unit.
Wooden case	Builded according to project needs	Prototype of case for storaging multiple ALICE’s modules.

3. Schematics



4. Pinouts



Pic. 1. Arduino Uno's pinout.

Pic. 2. DS18B20’s probe.

Arduino Uno	DS18B20’s probe
D13	Yellow wire
+5V	Red wire
GND	Black wire

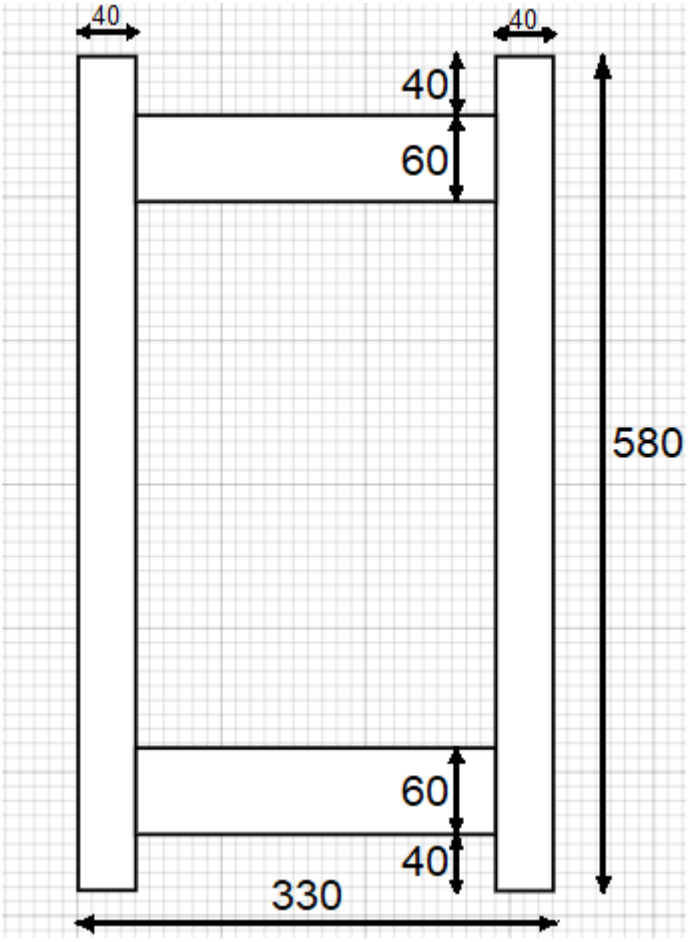
Pic. 3. 1-channel relay module.

Arduino Uno	1 channel Relay module
D2	IN
+5V	Vcc
GND	GND

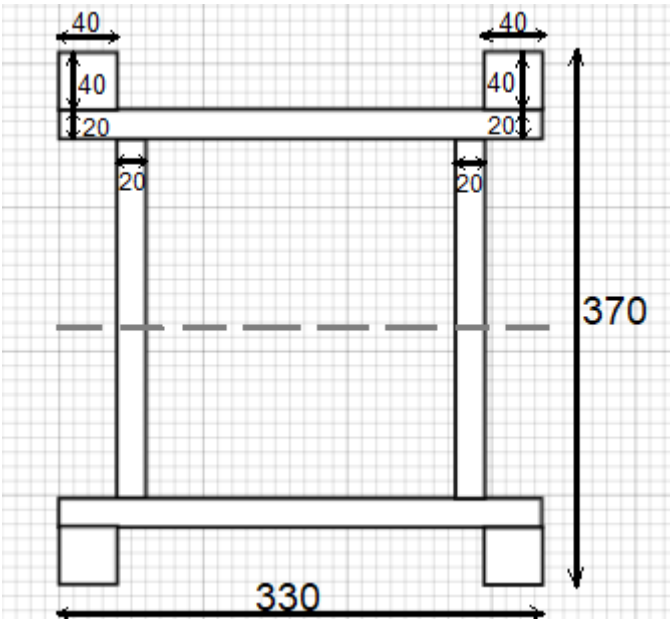
Pic. 4. Monostable tact switch.

Arduino Uno	Monostable tact switch
D3	1st pin pair
GND	2nd pin pair

5. Wooden case



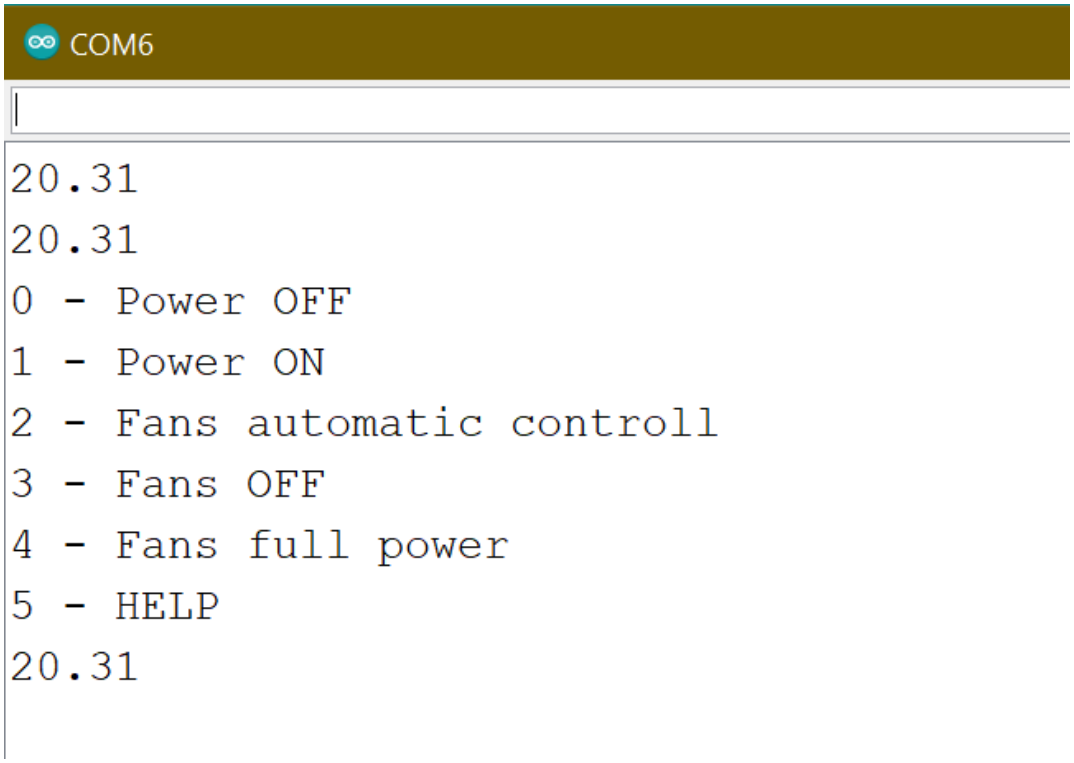
Pic. 6. Front view sketch.



Pic. 7. Up view sketch.

Pic. 8. Real view photo.

6. Interface



7. Source files

- **Projekt_ALICE.ino**