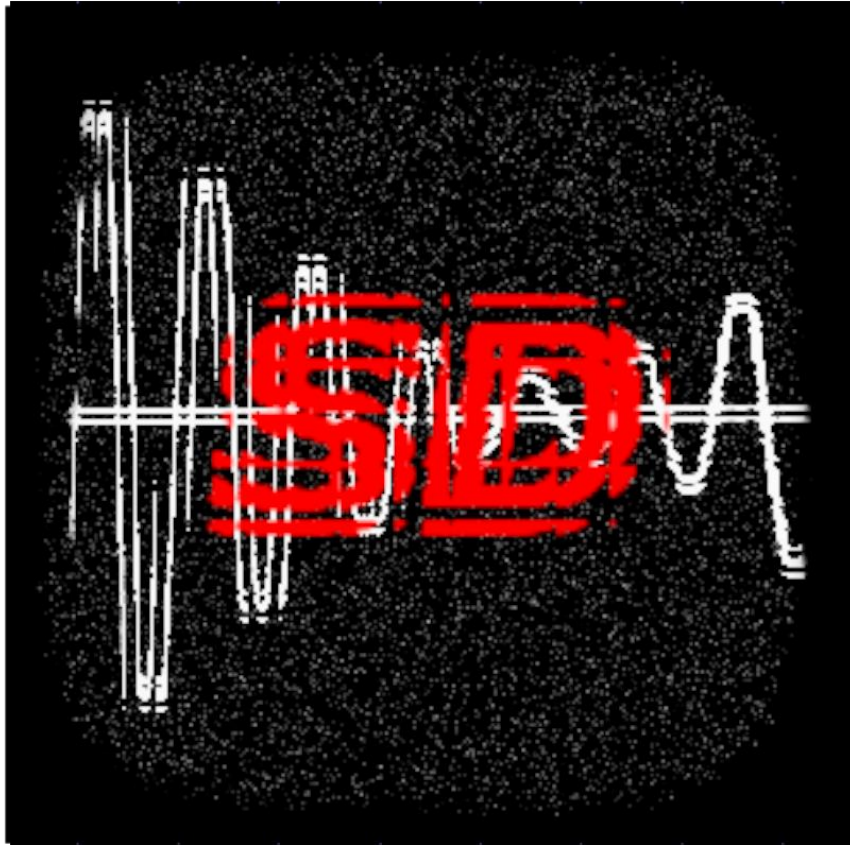


Functional description of firmware and settings via SD Plotter 1.00

SD PLOTTER

Version 1.00

Ver 1.00

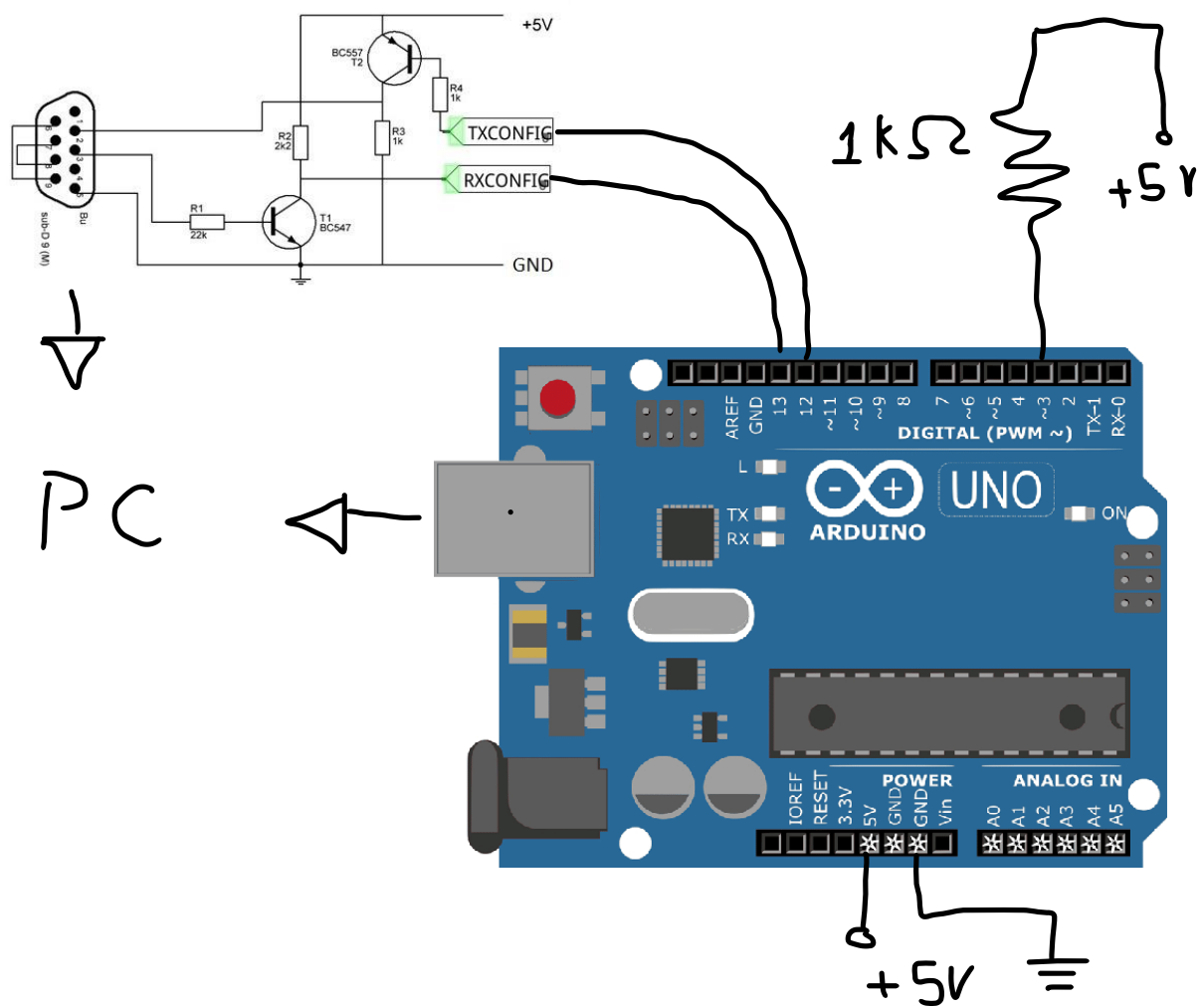


This document aims to explain how to configure firmware parameters and connection pins.

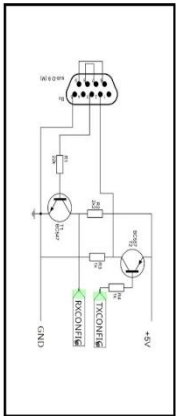
To understand the configurations to be performed by this document, the instruction manual and the quick guide should be seen first.

Once the Arduino UNO has already established connection with the SD Plotter 1.00 software. We will need to connect a serial port through Arduino pins 12 and 13.

Through the scheme presented here, we can understand the usage ports between the Arduino and the software.



SD PLOTTER V1.00

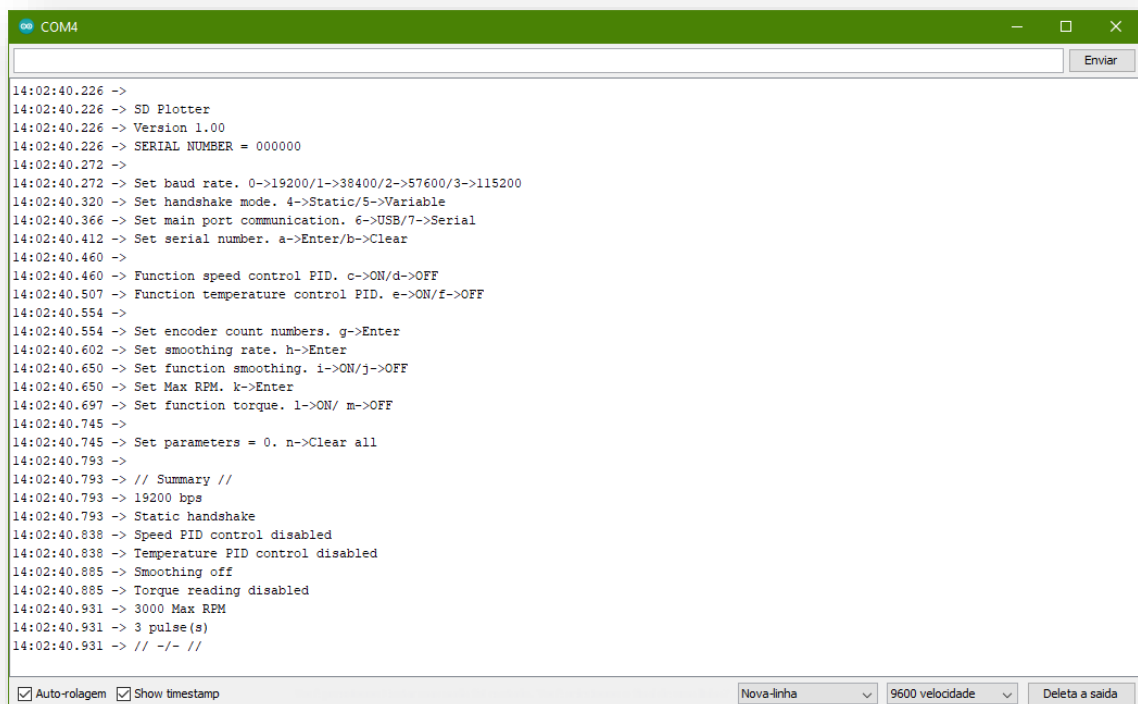


SDPlotter V1.00 - SCHEMATIC
Douglas Santana
11/04/2022

Once the Arduino is up and running with the simple serial port setup shown in the first figure, we'll open up SD Plotter 1.00 and the Arduino IDE.

In the SD Plotter program, we will connect with the COM port, referring to the Arduino USB input. In the Arduino IDE, we will open the serial monitor through the COM port referring to the serial connection created (9600 – baud rate).

The following configuration screen will appear:



```

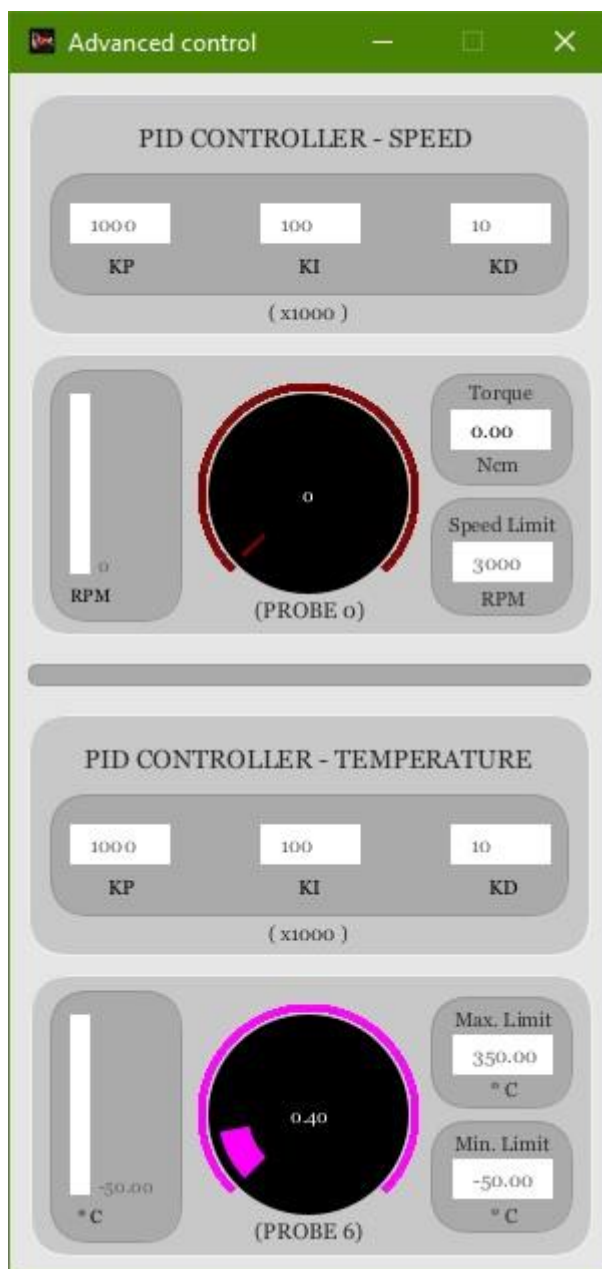
COM4
14:02:40.226 ->
14:02:40.226 -> SD Plotter
14:02:40.226 -> Version 1.00
14:02:40.226 -> SERIAL NUMBER = 000000
14:02:40.272 ->
14:02:40.272 -> Set baud rate. 0->19200/1->38400/2->57600/3->115200
14:02:40.320 -> Set handshake mode. 4->Static/5->Variable
14:02:40.366 -> Set main port communication. 6->USB/7->Serial
14:02:40.412 -> Set serial number. a->Enter/b->Clear
14:02:40.460 ->
14:02:40.460 -> Function speed control PID. c->ON/d->OFF
14:02:40.507 -> Function temperature control PID. e->ON/f->OFF
14:02:40.554 ->
14:02:40.554 -> Set encoder count numbers. g->Enter
14:02:40.602 -> Set smoothing rate. h->Enter
14:02:40.650 -> Set function smoothing. i->ON/j->OFF
14:02:40.650 -> Set Max RPM. k->Enter
14:02:40.697 -> Set function torque. l->ON/ m->OFF
14:02:40.745 ->
14:02:40.745 -> Set parameters = 0. n->Clear all
14:02:40.793 ->
14:02:40.793 -> // Summary //
14:02:40.793 -> 19200 bps
14:02:40.793 -> Static handshake
14:02:40.838 -> Speed PID control disabled
14:02:40.838 -> Temperature PID control disabled
14:02:40.885 -> Smoothing off
14:02:40.885 -> Torque reading disabled
14:02:40.931 -> 3000 Max RPM
14:02:40.931 -> 3 pulse(s)
14:02:40.931 -> // -/- //

☒ Auto-rolagem ☒ Show timestamp
Nova-linha 9600 velocidade Deleta a saída
  
```

Settings related to baud rate control, handshake mode, main port communication, function speed control PID, function temperature control PID, function smoothing, function torque, and set parameters can be set by the Arduino IDE serial monitor itself. That is, through direct commands, an action will be enabled, chosen, or disabled.

To define values for the serial number, encoder count numbers, smoothing rate, Max RPM functions, we will need the help of the SD Plotter, which must be connected at the same time.

Open the SD Plotter program's advanced control window.



In the KP, KI, KD fields of the PID CONTROLLER - SPEED, and in the KP, KI, KD fields of the PID CONTROLLER - TEMPERATURE, values can be entered that will be recorded in the Arduino UNO, when the established function is activated.

Following the consecutive order of the fields, it will be possible to configure the functions.

These are the minimum and maximum values allowed for firmware functions:

Set serial number: 000000 ~ 999999

Set encoder count number: 1 ~ 30

Set smoothing rate: 1 ~ 5 (for each pin)

Set Max RPM: 1 ~ 7000

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