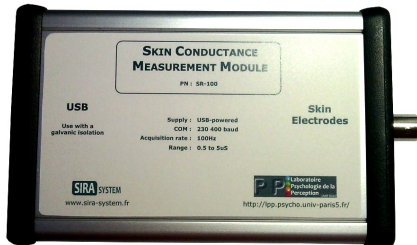


SR-100

Acquisition system for skin conductance measurement



Description

The SR-100 module allows to perform the acquisition of the skin conductance and to send the results via USB.

The simple-formatted output makes the result easily used by a PC thanks to a virtual COM port.

This equipment, developed in partnership with the LPP (Paris 5), is particularly useful for research and teaching purposes.

General features

Dimensions	140 mm x 81 mm
Thickness	32 mm
Weight	220 g
Connections	USB, BNC

Climatic conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +70°C

Electrical features

Power supply	+5V _{DC} (USB)
Measurements range	0,5uS to 5uS
Conversion rate	100Hz
Precision	+/-5 %
Data interface	USB type B

The BNC output allows to connect electrodes on the patient / subject of the experiment. These electrodes are not provided with the module.



Like all medical equipments, the SR-100 shall be used with a galvanic isolation.

Connection to a PC

The drivers are installed at the same time as the Arduino development environment.

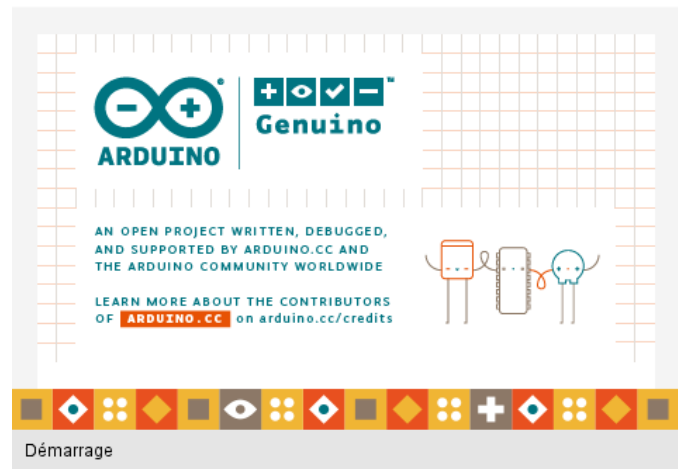
Download the package adapted to your operating system on :

www.arduino.cc/en/Main/Software

Install the package.

At the end of the installation, connect the USB plug of the SR-100 module to the PC. The driver detection is automatic.

In the peripheral manager, the operating system considers now the SR-100 module as a virtual COM port.



Data recovery

It is possible to retrieve data in 2 ways :

- Use a software that can read COM ports and is able of displaying or saving the data.

The example of the *SCViewer* is given below.

- Write your own application for advanced users.

The communication parameters are the followings :

230.400 baud

No parity

8-bit data

1-bit stop

No control

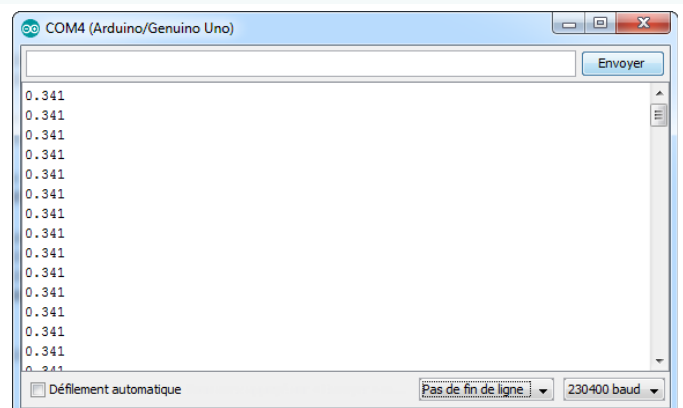
USB data format

The SR-100 module continuously transmits the converted data.

The data is a string representing a 3-decimal floating number. A line break delimits each data item.

The data is in micro Siemens (uS).

It is sent at a rate of 100 measurements per second.



SCViewer demonstrator

In order to start with the SR-100 module, it is possible to use the SCViewer demonstrator.

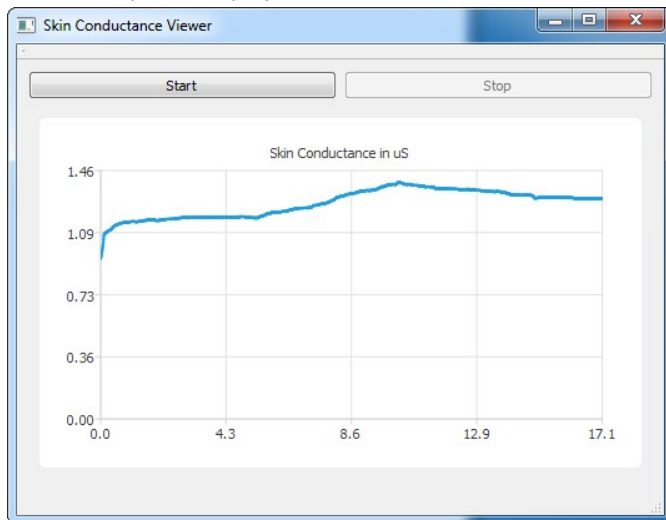
This software allows to acquire data from the SR-100:

- by displaying the results on a graph.
- by exporting each curve as a CSV file

Data displaying

Press « Start » to launch an acquisition.

Press « Stop » to display the chart.



On the X-axis : the time in seconds.

On the Y-axis : the conductance in uS.

Data saving

At the end of each acquisition, a CSV file is produced. It contains the data as well as their timestamps.

This file can then be used by spreadsheets (Excel, Calc ...) or other programs in order to exploit the results more finely.

This file is saved as "export.csv".

It contains for each measurement :

- a timestamp in seconds
- a delimiter ";"
- the measurement in uS
- a delimiter ";"
- a line break

Here is the example of an acquisition of 100ms.

```

Results :
0.00;0.941;
0.01;0.947;
0.02;0.955;
0.03;0.963;
0.04;0.974;
0.05;0.984;
0.06;0.995;
0.07;1.008;
0.08;1.020;
0.09;1.033;
0.10;1.054;
  
```