

User Manual – short version

Avisaro Data logger Cube with RS485 interface

Product M22766



This is a short version of the manual. For further information an online-documentation is published at www.avisaro.com

1. Functions / product description

The Avisaro data logger is a microprocessor-controlled unit for storing technical data. The logger either passively collects the data coming in via interface or actively requests the data. The behavior of the logger depends on the so-called script that is loaded. The script rules such as:

- the behavior when connecting
- how and what data is stored
- the sending of commands or information via the interface
- small real applications are possible, such as e.g. a sensor is actively read or if the thresholds are exceeded, an action is performed

Scripts are simple programs written in Basic, which are either loaded from the Avisaro homepage ready for standard applications or changed resp. written by the user itself. For further information a guideline is given on the homepage of Avisaro. The data logger boxes or cubes are provided with a script for the storage of data on delivery.

The change the configuration or the script commands can be written in a text file named autorun.txt. The Avisaro data logger reads this file if it is placed on a SD card in the slot during booting. Once made the changes and scripts are stored in the long term. The can be changed again during any boot process. Alternatively control and configuration commands can be entered via the interface as long as no script is running. In contrast to the PC, Avisaro devices need almost no boot time. In automatic mode, the script starts with power on its own and takes all processes fully automatically.

2. Getting started

Connection

The cube will be connected with the data source and power (voltage: 6 V - 32 V) by the terminal block inside under nice the top cover according to the pin specification. It is important to note the pin assignment below.

The cube is equipped with an RS485 interface.

RS485 with screw type connector

The RS485 interface with the screw type connector has the following pin assignment:

1. Signal Ground (GND)
2. Internal use (*)
3. n.c.
4. RS485 Signal B (-)
5. RS485 Signal A (+)
6. n.c.
7. Supply Voltage (6-32V)
8. Supply Ground (GND)

DIP Switches

1. Terminating Resistor
2. not connected
3. not connected



Thus, the cube is ready to the passive data recording. The green led inside lights up.

Control elements

The logger cube has internal control elements, which are protected under the top cover. The top can be removed for their operation. To receive protection against water and dust make sure, that the top cover is correctly screwed again afterwards. The controls consist of a red and a green light emitting diode (LED) to the display of operating conditions, as well as a button for user input.

The function of the LEDs and the key is determined by the loaded script. If there is no script loaded, or the execution of scripts is disabled, no LED lights up. For a description of the use of the LED and button please see the documentation of the script. For the most scripts the Green LED means device is turned on and has sufficient voltage. The red LED signals logger is prepared to record or records.



The slot for the memory card is also located in the top cover.

Memory cards

Memory cards of the type "SD" and "SDHC" can be used. The logger is tested for cards up to 16 GB. Cards from any manufacturers can be used. Note, however, that the quality of 'Low-cost cards' for industrial use is often not enough. Special "high speed" or "Extreme" cards work have no advantage in the Avisaro logger. The cards are inserted as soon as a click is felt. To remove, press the cards easily in. A spring pushes them out.



Settings

The data logger is equipped with a standard script and the interface is set on default. As far as this is according to your connection environment all incoming data are stored on SD card.

RS485 default settings

Baudrate: 9600
No of bits: 8
Parity bits: none
Stop bits: 1
Flow control: none

Real time clock

The Avisaro boxes and cubes have a buffered real-time clock. Date and time can be used, for example, for file names, timestamps, and other functions. The clock is used by the script or commands.

Internally, the clock is powered by a rechargeable battery. This battery holds about 1 month without external supply. If power is connected to the cube, the battery is reloaded within 48 h.

The watch is set in the factory (time zone: Berlin). The time can be changed through configuration easily. The precision is a few minutes per year. Summer / winter time conversion is not supported.

3. Technical details

Electrical properties

The power supply has a range from 6 V - 32 V. If the voltage falls below 6 V the save function is not guaranteed. At low voltage, the box automatically makes a fresh start ("Bown-Out"). A voltage exceeding 32 V can cause permanent damage.

The entrance for the power supply is equipped with a reverse pole protection - if mass and VCC is accidentally swapped. Internally, the logger has a fuse that opens at a power consumption exceeding 1 A. The fuse can be changed only by Avisaro AG. Typically, a defective fuse is a sign of another more fundamental defect in the power supply.

The power consumption is about 0.5 W for data logger and approx. 1 W for devices with integrated Wi-Fi.

Mechanical data:

Dimensions: 98 x 64 x 34 mm

Weight: 110 g

Protection class: IP66 (weatherproof)

Temperature: -30 ° C to 85 ° C (if necessary constraints through used SD card)

4. Interface configuration / Script loading

Configure of the interface using the configuration file on SD card (autorun.txt)

All settings are written in a normal text file with the name "autorun.txt".

Example of how to configure of the RS485 interface

```
prot rs485
rs485 115200 8 N 1 N
load script.txt
run auto
run
```

Note: it is important that the last line is terminated with pressing the 'enter' button is completed. This example sets the data interface RS232, adjusts the interface parameters and loads a new script.

Details:

Prot: selects the interface ([details](#))

RS485: sets the parameters of the interface ([details](#))

load: loads a script ([Details](#))

run: to be configured, such as the script started when ([Details](#))

In this example, the "script.txt" script is loaded (this must be also placed on the SD). The script is finally on ' automatic run after start ' provided. The second command run starts the script immediately.

Almost all settings are stored internally in the Flash - the autorun.txt needs to be placed only once and then can be deleted from the disc. This is how it works:

1. Autorun.txt create file and save to memory card
2. Avisaro turn off logger and insert the memory card
3. Avisaro turn on logger and wait about 10 seconds. During this time, the commands in the autorun.txt are processed file
4. Avisaro turn off logger and delete autorun.txt from disk
5. After the setting is active

For more details about the commands, please see Avisaro homepage-Wiki ([details](#)).

Configuration of the interface on the interface itself

This method requires a terminal-capable connection of the current configuration of the interface. In this case a script must not be active. This approach is only recommended in exceptional cases, for example the automated setting of the device.

5. Safety and Maintenance

The Avisaro data logger is an electronic device. It has to be treated as such. The Cube is weather- and dust resistant according to IP66 only as long as the top cover is closed and screwed tied.

Avisaro AG is not taking any responsibility for the damage or loss of data.

Please pay attention to the treatment advises at www.avisaro.com.

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