



Avisaro 4.0 Product Series

Quick Guide

RS232 Data Logger '4.0 Sky'

("M41014" / "C41014")

RS232 Data Logger

Version / Date: 2021/06/16



1 TABLE OF CONTENT

2	This document	4
2.1	Location.....	4
2.2	Other documents.....	4
2.3	Language Versions	4
3	Enclosure and User Controls.....	5
3.1	Start and stop operation.....	5
3.2	LED Blink-Codes.....	5
3.3	Real-Time Clock.....	5
3.4	Enclosure “4.0 Sky” with D-Sub connector	6
4	USB Storage Stick	7
4.1	Filesystem and Storage size	7
4.2	Choosing the right memory stick	7
5	Interface description and Pin Layout	8
5.1	Micro-USB Client.....	8
5.2	RS232 Interface	8
5.2.1	Default RS232 settings	8
5.2.2	Signal levels.....	8
5.2.3	D-Sub Connector	8
6	Configuration: ‘PC Companion Software’	10
6.1	How to configure Avisaro “Series 4.0” products	10
6.2	Concept of operation	10
6.3	Detailed documentation	10
6.4	“PC Companion Software” Installation	11
6.5	Driver installation.....	11
6.6	Initial Set-Up	12
6.7	Using the PC Companion Tool.....	12
7	Declarations	13
7.1	EC/EU Declaration of Conformity	13
8	Contact and Support	14

2 THIS DOCUMENT

2.1 LOCATION

Check for the latest document version the following link:

German site: <https://www.avisaro.de/de/40-Datenlogger-Sky-1xRS232-DSUB.html>

English site: <https://www.avisaro.com/en/40-Data-Logger-Sky-1xRS232-DSub.html>

2.2 OTHER DOCUMENTS

“Technical User Manual 4.0” contains all of this and more information.

Link: <https://www.avisaro.com/en/40-ENG-Documentation.html>

2.3 LANGUAGE VERSIONS

This document is available in English version only

3 ENCLOSURE AND USER CONTROLS

3.1 START AND STOP OPERATION

The Avisaro 4.0 starts with operation right after power on if a USB stick is inserted. Also, after re-inserting a USB stick, the operation starts automatically.

3.2 LED BLINK-CODES

There is one multicolor LED to signal states of the Avisaro device.

Code	What is means	Action
Green & blue fading	All is fine Idle state, no data arriving	None
Green flashing	Data are coming in (RS232, CAN interface) ¹⁾	None
Yello constant	All is fine, USB stick is checked after mounting	None
Red flashing	No USB stick or button was pushed	Insert USB stick Or press button again

¹⁾ On analog loggers (e.g. 4...20mA) and similar interfaces, data are read continuously, thus no green flashing is shown

3.3 REAL-TIME CLOCK

A battery buffered internal real time clock is available for time stamping data, start and stop network upload and others controls. The battery is a rechargeable “memo-buf” cell - specifically designed for RTC operations. During regular operation, the battery is recharged over a 48h period. During non-operating times (= supply power off) , the date and time settings are maintained.

If the Avisaro device is networked, a network time server (SNTP) can be used to set time and date automatically.

If a Avisaro GPS receiver is connected, the RTC can be set using satellite time.

It is possible to define time zones settings.

3.4 ENCLOSURE “4.0 SKY” WITH D-SUB CONNECTOR

Front with slot for USB stick. Matches are shown just for size reference:



Reverse side shows D-Sub connector for data and barrel connector for power. The micro USB port is for configuration only:



Optional, a DIN rail fitting is available:



4 USB STORAGE STICK

4.1 FILESYSTEM AND STORAGE SIZE

Commercially available USB 2.0 / 3.0 memory sticks can be used. It is recommended to exclude branded products - no "promotional items" with your own logo imprint.

There are no speed requirements. Memory sticks that are advertised as particularly fast offer no (!) advantage in the Avisaro data logger. Typically these optimizations are designed for cameras etc..

Memory sizes from 4 to 256 GByte are supported. As file system FAT or FAT32 (preferred) is used. NTFS or others are not supported.

Memory sticks are typically not in the scope of delivery - each application typically has different requirements.

4.2 CHOOSING THE RIGHT MEMORY STICK

For **industrial** use, special parameters may have to be observed.

The **temperature** range should be considered. There are "industrial grade" memory sticks available - often designed as "SLC" version - which are also suitable for harsh environments.

The **mechanical dimension** should also be considered. It is disadvantageous if the stick protrudes openly from the housing and could be knocked off. In this case short sticks are recommended. If the logger is installed protected, then a longer stick is easier to use.



The appropriate **memory size** also depends on the intended use. Due to the technology, memory sticks with an extremely high capacity are typically less robust than smaller memory sizes. The loggers have a "ring memory" that can be optionally activated. If the memory stick becomes full (approx. less than 100MB free memory) the oldest files are deleted - this is a useful setting for some applications.

5 INTERFACE DESCRIPTION AND PIN LAYOUT

5.1 MICRO-USB CLIENT

The Micro-USB client interface is used for configuration only.



Most Avisaro devices are powered through the Mico-USB client port, however only for configuration. A stable regular operation is not guaranteed. Use the regular power supply for normal operation.

A “Micro USB” cable is used. As those cable are widely available, this cable is not part of scope of delivery to avoid electronic waste.

5.2 RS232 INTERFACE

This is an industry standard RS232 connection.

5.2.1 Default RS232 settings

Those are the default settings:

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

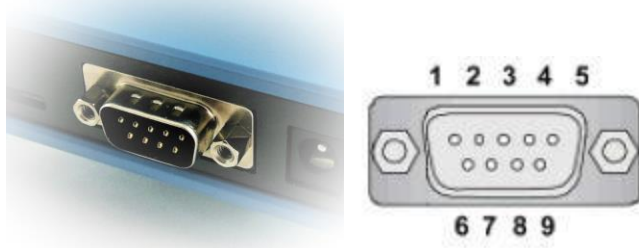
5.2.2 Signal levels

Max Input voltage range on signal pins: -24 to 24 V

Output level provided: -5V to 5V

5.2.3 D-Sub Connector

Industry standard SubD-9 connector (male)



Connector	Interface	Pin	Signal	Direction
D-Sub, 9 pol, male	1 st RS232	1	n.c. (optional DCD)	
		2	RxD - Data	in
		3	TxD - Data	out
		4	n.c. (optional DTR)	
		5	GND	Power & Signal
		6	n.c. (optional DSR)	
		7	RTS - Signal	out
		8	CTS - Signal	in
		9	n.c. (optional: VCC (6..32V))	Power

Supply voltage does not carry an output voltage – thus if the device is powered via barrel connector, Pin 9 does not show the input voltage (internal diode). This is for security reason. If needed, Avisaro can modify the device such that this pin can be used to power other devices.

6 CONFIGURATION: 'PC COMPANION SOFTWARE'

6.1 HOW TO CONFIGURE AVISARO "SERIES 4.0" PRODUCTS

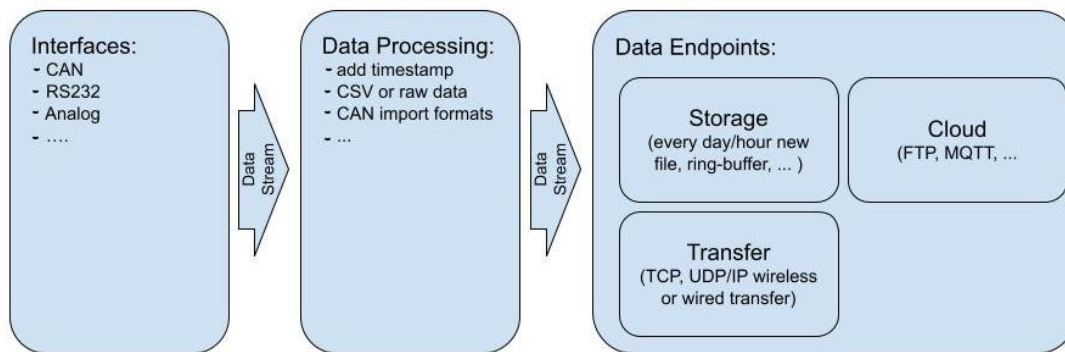
The basic principle of how to configure the Avisaro "Series 4.0" products is:

- 1) Download and install the "Avisaro PC Companion Software".
- 2) Connect the Avisaro device via USB cable.
- 3) Choose the correct COM port and click on "connect".
- 4) The software presents all the settings you can make and guides you to avoid conflicting configurations.
- 5) Click on "save configuration" to store changes in the Avisaro device.
- 6) Reboot the Avisaro Device so that the new configuration takes effect.

Details are described further down in this document.

6.2 CONCEPT OF OPERATION

The Avisaro 4.0 is divided into sections:



Data are received through an "Interface" and then forwarded to the "Data Processing" section. All formatting happens here and then data is forwarded to the "Data Endpoint".

6.3 DETAILED DOCUMENTATION

This current document shows only selected parts of the full "Avisaro PC Companion Software" user manual. The motivation is to keep this document as compact as possible.

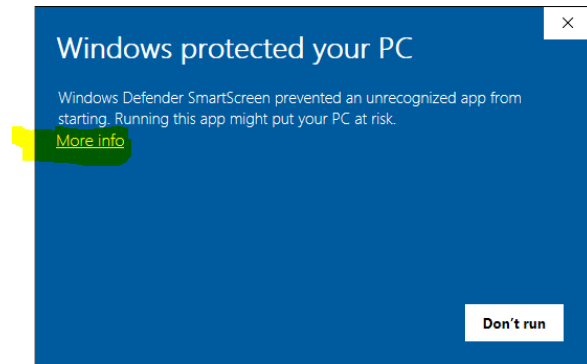
Please find the extensive "Avisaro PC Companion Software" document in the support section of the Avisaro website:

German: https://www.avisaro.de/de/40_Dokumentation.html

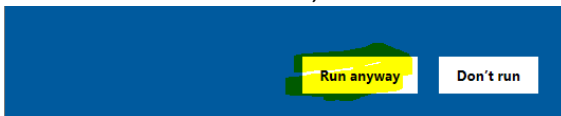
English: <https://www.avisaro.com/en/40-ENG-Documentation.html>

6.4 “PC COMPANION SOFTWARE” INSTALLATION

Windows warns the user before installing or using software downloaded from the Internet. So if you click on “Avisaro_40_Companion_v2.31_Setup.exe”, the warning will occur:



After a click on “More Info”, the box shows:



Select “Run anyway” to continue.

6.5 DRIVER INSTALLATION

If you connect the Avisaro Device to the PC using a Micro USB cable, a virtual COM port driver is installed. If this driver does not install automatically, you can download and install this manually:

<http://www.avisaro.de/de/40-PC-Treiber.html> (German site)

<http://www.avisaro.com/en/40-ENG-PC-Driver.html> (English site)

6.6 INITIAL SET-UP

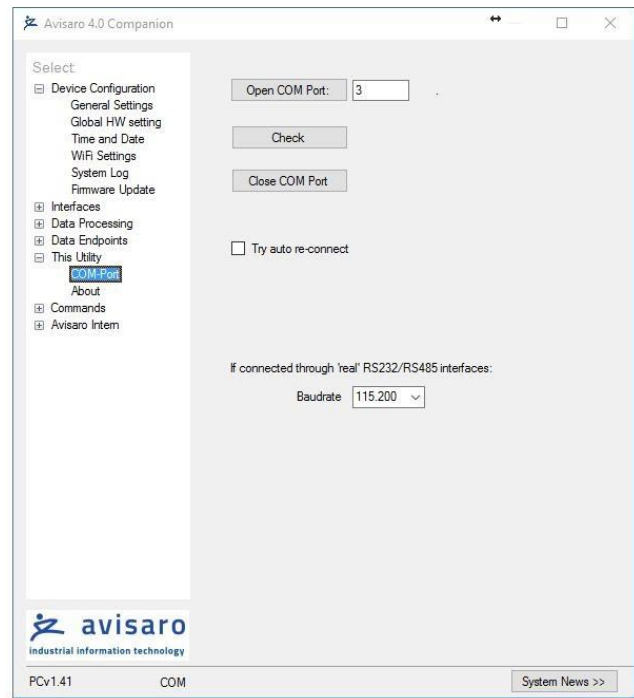
After starting the companion software, the virtual COM port number needs to be entered. You can find this number in the Windows “Device Manager”.

This setting is stored for future use.

Click on ‘open COM port’ – which will turn green if successful. You can use the “check” button to verify that the connection is alive.

You can use the “Check” button to verify the connection to the Avisaro Device. It should light up green when clicked.

The baudrate setting for “if connected through real RS22.. “ can be ignored. This setting is used only in special projects and not scope of this document.



All settings are deactivated if there is no Avisaro Device attached.


6.7 USING THE PC COMPANION TOOL

Click on “Write Config” to transmit changes in the PC tool to the Avisaro device. Click on “Read Config” to display the currently stored values (if you navigate between options, the latest settings are read of course automatically).

Most settings become active only after reboot. This can be done in Commands ⇔ Device Control: Reboot Device.

7 DECLARATIONS

7.1 EC/EU DECLARATION OF CONFORMITY



avisaro
industrial information technology

EG/EU Konformitätserklärung
EC/EU Declaration of Conformity

Name des Herstellers **Avisaro AG**
Manufacturer Name **Grosser Kolonnenweg 18 E**
30163 Hannover
Germany

erklärt in alleiniger Verantwortung, dass das Produkt
declares in its sole responsibility, that the product

Bezeichnung des Produkts **Datenlogger 4.0 „Sky“**
Description of Product

Type(n) **Serie M4xxx**
Type(s)

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.

<u>Richtlinie(n)</u> <i>Directive(s)</i>	<u>Norm(en)</u> <i>Standard(s)</i>
Bis / <u>until</u> 2016-04-19: 2004/108/EG	EN 55022 : 2010 EN 55024 : 2010
Ab / <u>from</u> 2016-04-20: 2014/30/EU	
Sonstige Normen: <i>Other <u>normes:</u></i>	EN 60950-1 : 2006 EN 60529 + A1 2000 (Cube IP 66)

Hannover, 08.03.2016

Ort, Datum
Place, date

M. Colman
Matthias Colman
Leitung Entwicklung
Head of development

8 CONTACT AND SUPPORT

Please contact Avisaro if there are any questions:

Avisaro AG
Grosser Kolonnenweg 18 E
30163 Hannover
Germany

Email: support@avisaro.com

End of this documentation