

# INSTALLATION MANUAL

# S107USB / K107USB

RS485/USB asynchronous serial converter



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For manuals in other languages and configuration software, visit:  
[www.seneca.it/products/k107usb](http://www.seneca.it/products/k107usb) ; [www.seneca.it/products/s107usb](http://www.seneca.it/products/s107usb)

## PRODUCT DESCRIPTION

The S107USB and K107USB products, constitute an interface able to realize an asynchronous RS485 serial, using a USB port present on the PC.

Thanks to the driver provided, the serial interface is treated by the operating system as a standard system serial port, allowing the use of the product directly through any software capable of communicating with the standard serial ports provided by the operating system (COM1, COM2, etc).

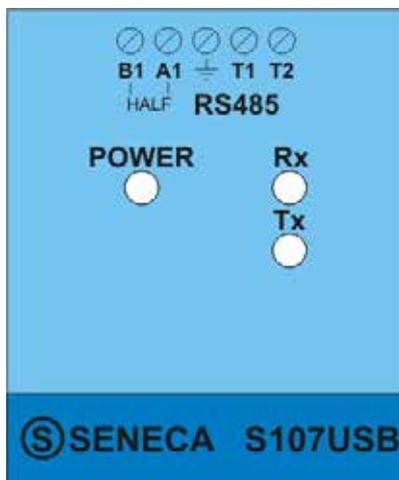
The RS485 port is also electrically isolated from the USB port, allowing eliminating many problems of electrical noise that can occur for example when the connected equipment is very far from the PC.

## MODULE LAYOUT

Both modules have three LEDs that allow viewing the state of the instrument activity.

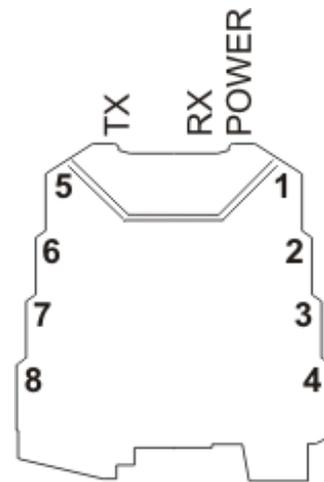
### S107USB LED POSITION

In the S107USB, the LEDs are positioned as follows:



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## SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
PWR Green	ON	The device is powered correctly
RX Red	ON flashing	It lights up every time the instrument receives data through the RS485 port
TX Red	ON flashing	It lights up every time the instrument transmits data through the RS485 port.

## TROUBLESHOOTING

If problems occur with the use of the converter, check the following points:

PROBLEM	CHECK
The "POWER" LED does not come on	Check that the PC's USB socket provides for the supply of the 5 V needed to power the instrument
The "Rx" led remains on continuously	Check that the RS485 cables have not been swapped.
The received data is incorrect	Check the communication speed

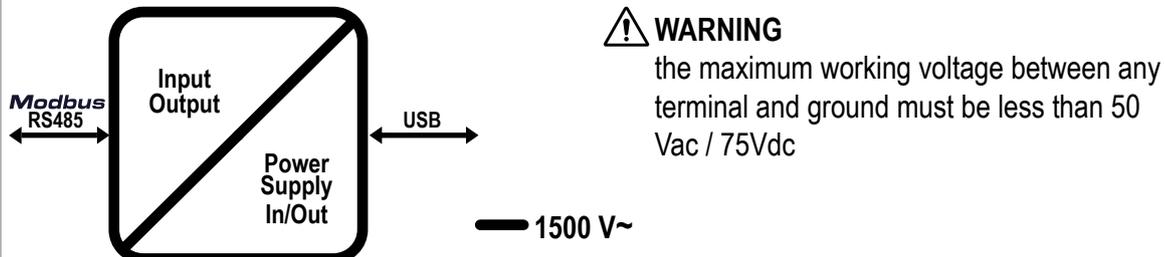
## PRELIMINARY WARNINGS

The word **WARNING** preceded by the symbol  indicates conditions or actions that put the user's safety at risk. The word **ATTENTION** preceded by the symbol  indicates conditions or actions that might damage the instrument or the connected equipment.

The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

	<b>WARNING:</b> The full content of this manual must be read before any operation. The module must only be used by qualified electricians.
	The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation.
	Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows the product must be surrendered to a collection centre authorized to recycle electrical and electronic waste.

## TECHNICAL SPECIFICATIONS

<b>STANDARDS</b>	<b>EN61000-6-4</b> Electromagnetic emissions, industrial environment. <b>EN61000-6-2</b> Electromagnetic immunity, industrial environment. <b>EN61010-1</b> Safety <b>Note UL:</b> use in environments with pollution degree 2 or lower. The power supply unit must be class 2.
<b>INSULATION</b>	
<b>ENVIRONMENTAL CONDITIONS</b>	<i>Temperature:</i> -20 – + 65°C (-10 - +55 °C UL) <i>Humidity:</i> 10%– 90% non condensing. <i>Altitude:</i> up to 2000 m above sea level <i>Storage temperature:</i> -40 + 85° <i>Protection degree:</i> IP20.
<b>ASSEMBLY</b>	IEC EN60715, 35mm DIN rail in vertical position.
<b>CONNECTIONS</b>	5-way removable screw terminals, pitch 5 mm (S107USB) Spring-loaded terminals, conductor cross-section 0.2 ... 2.5 mm <sup>2</sup> , stripping 8 mm (K107USB)
<b>POWER SUPPLY</b>	Through PC USB port.
<b>SERIAL COMMUNICATION</b>	RS485 through MODBUS -RTU protocol, 32 nodes maximum. Possibility of multiple connection of several S107USB or K107USB units on the same PC.
<b>BAUDRATE</b>	1200 bps, 115200 bps.

## INSTALLATION REGULATIONS

### S107USB INSTALLATION REGULATIONS

With regard to the S107USB instrument, there are no particular precautions to follow, except that of using a shielded cable for the RS485 lines for long connections or connections in noisy environments (please refer to the Electrical Connections section).

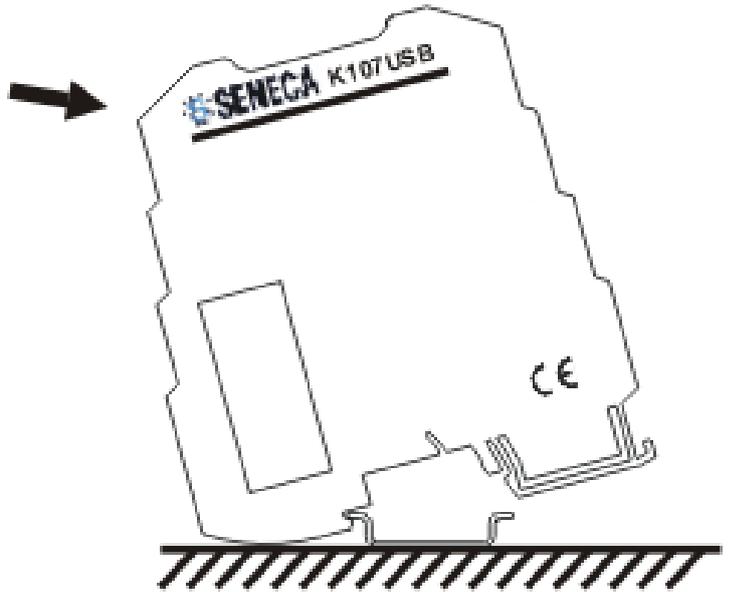
### K107USB INSTALLATION REGULATIONS

The module has been designed for vertical installation on a DIN 46277 rail. Avoid mounting modules over heat-generating equipment. Installation in the bottom part of the electrical panel is recommended.

#### ***Insertion in the DIN rail***

As shown in figure:

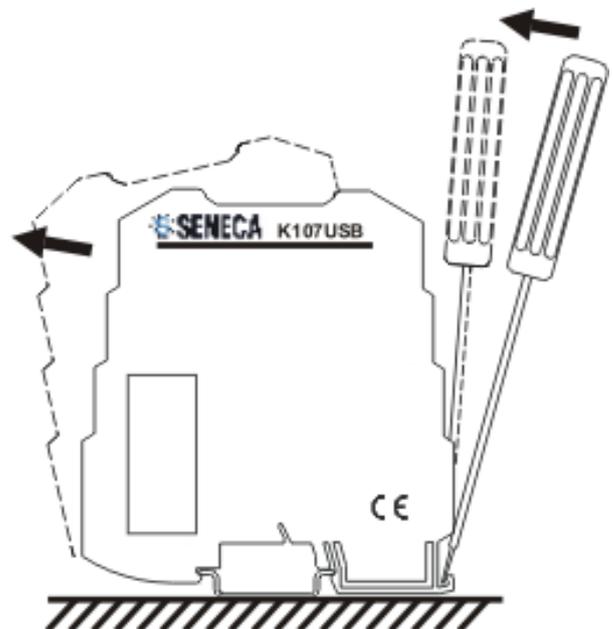
1. Hook the module in the upper part of the rail.
2. Press the module down.



#### ***Removal from the rail DIN***

As shown in figure:

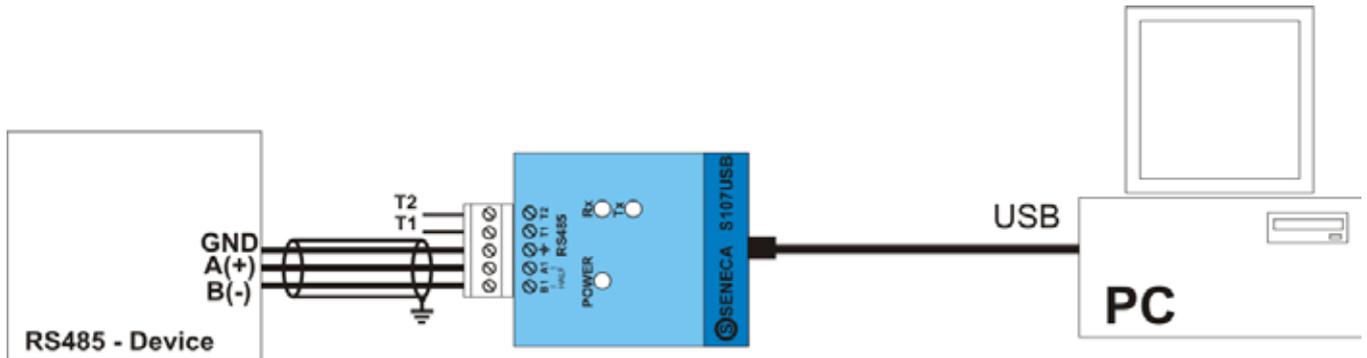
1. Lever with a screwdriver (as shown)
2. Rotate the module upwards.



For long connections or in noisy environments, use a shielded cable for the RS485 line (refer to the Electrical Connections section)

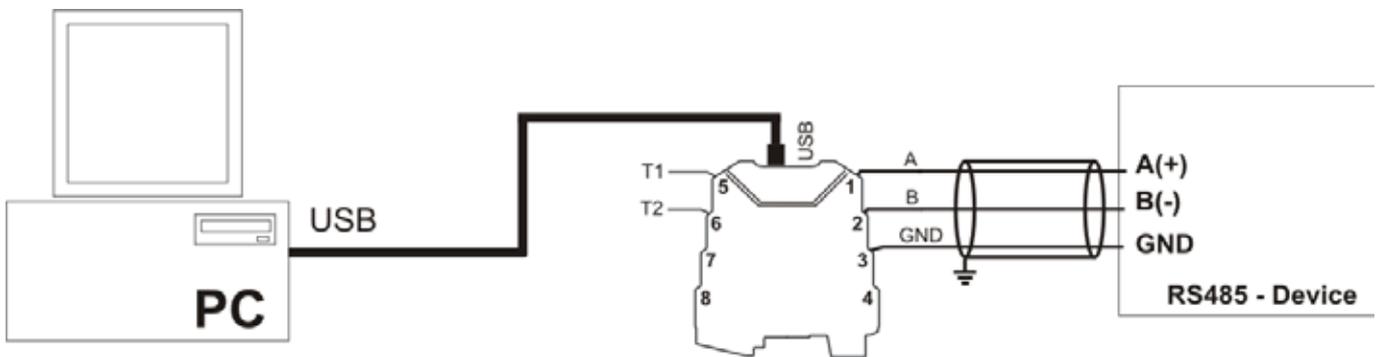
## ELECTRICAL CONNECTIONS

**S107USB:** the electrical connections of the S107USB are shown below:



By inserting an external jumper between terminals T1 and T2, the terminator of the RS485 line is enabled. We also recommend to use a shielded cable for the RS485 line, in particular if long connections are to be made or in noisy environments.

**K107USB:** the electrical connections of the S107USB are shown below:



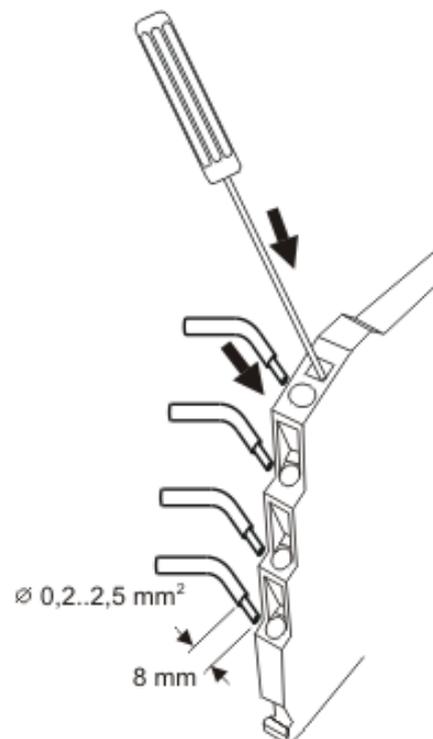
By inserting an external jumper between terminals T1 and T2, the terminator of the RS485 line is enabled. We also recommend to use a shielded cable for the RS485 line, in particular if long connections are to be made or in noisy environments.

### Terminal connections:

The module has spring-loaded terminals as electrical connections.

To make the connections refer to the following instructions:

- 1 - Strip the cables by 0.8mm
- 2 - Insert a flat-blade screwdriver into the square hole and press it until the locking spring of the cable opens.
- 3 - Insert the cable into the round hole
- 4 - Remove the screwdriver and check that the cable is firmly fixed in the terminal



## DRIVER INSTALLATION

The user is provided with a CD containing the instrument driver.

In this section we will describe in detail the driver installation procedure.

It should be noted that the installation in Linux environments (with Kernel 3.0.0-19 or later) is automatic and does not require the driver CD. The standard serial port of the PC with which the device is identified is the following: /dev/ttyUSB0.

As for Windows operating systems, it is important to stress that the procedure consists of two distinct phases, equally important for the final use of the instrument. In the first part the driver of the actual serial converter will be installed. Through the second phase the virtual driver will be installed which will allow the use of the peripheral as a standard serial port of the operating system.

If you are using Windows 7, these two phases are identical and are followed step by step, while for other versions of Windows the second part is automatically managed by the operating system without further dialogue with the user. Below is the installation procedure for Windows 7.

### DRIVER INSTALLATION WITH WINDOWS 7:

Connect the instrument to the PC already switched on, so that the operating system can detect the presence of the device automatically. As soon as the operating system detects the presence of the converter, the installation will begin and the following messages will be displayed:

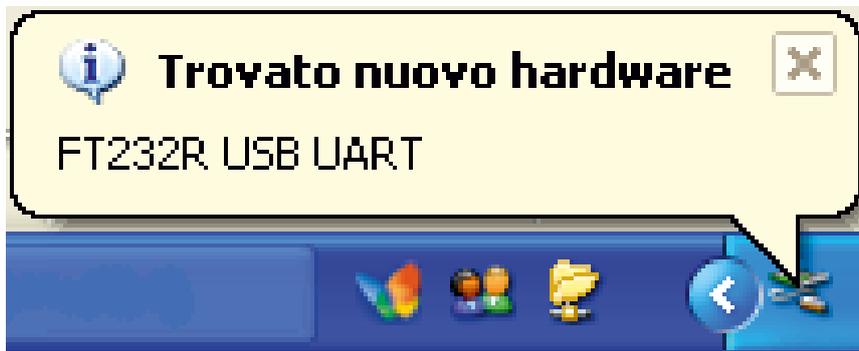


FIG. 1



FIG. 2

If the installation does not start automatically, you will have to proceed manually, following the instructions given. First of all you need to have an internet connection allowing the instrument to perform the driver update following the automatic procedure or by connecting (<http://www.ftdichip.com/Drivers/VCP.htm>). For the automatic procedure, configure as in Fig 3.

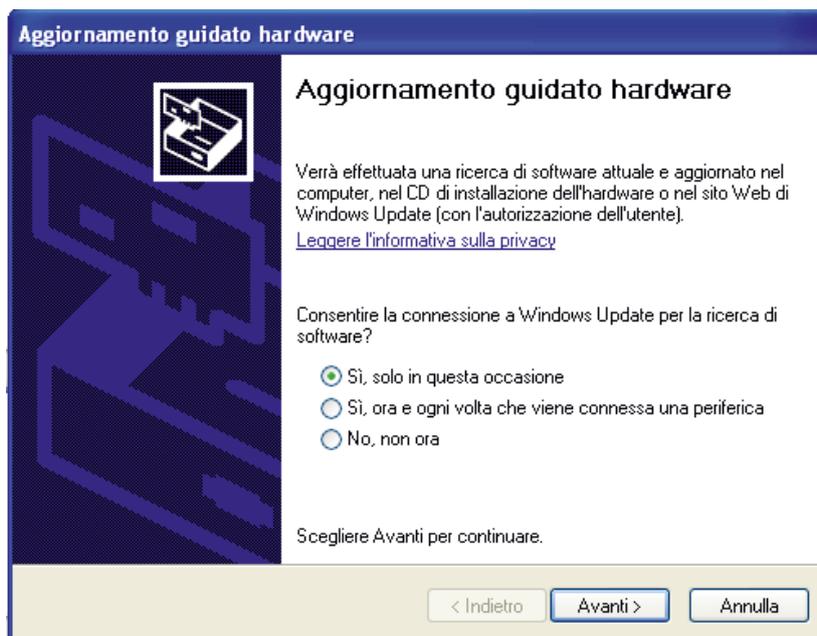


FIG. 3

On the next screen proceed as follows:

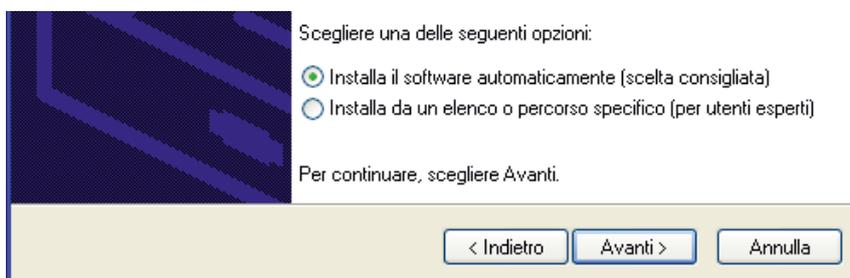


FIG. 4

At the end of the search for the driver, a screen appears that shows the update and installation have been carried out correctly. It will therefore be possible to see the instrument among the installed USB devices and among the serial communication ports. (COM1, COM6 etc..)



FIG. 5

## ACCESSORIES

CODE	DESCRIPTION
CU-A-MINIB-2	USBA-miniB 2-metre communication cable
K-BUS	Expandable 2-place connector, EN 60175 (only for K107USB)

## CONTACT INFORMATION

Technical support	<a href="mailto:supporto@seneca.it">supporto@seneca.it</a>	Product information	<a href="mailto:commerciale@seneca.it">commerciale@seneca.it</a>
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