

RESI INFORMATIK



RESI-USB-SIO RESI-USB-BOX RESI-USB-PS



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1 History

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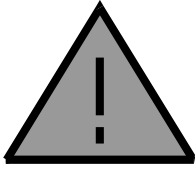
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3 IMPORTANT SECURITY NOTES



Danger to life through electrical current!

Only skilled personal trained in electro-engineering should perform the described steps in the following chapters. Please observe the country specific rules and standards. Do not perform any electrical work while the device is connected to power.

Pay attention to the following rules:

1. Disconnect the system from power
2. Secure the system against automatic power on
3. Check that the system is de-energized
4. Cover other energized parts of the system

IMPORTANT HINT: Before you start with the installation and the initial setup of the device, you have to read this document and the attached installation guide and the actual manual for the device very carefully. You have to follow all the herein given information very accurate!

- Only authorized and qualified personnel are allowed to install and setup the device!
- The connection of the device must be done in de-energized state!
- Do not perform any electrical work while the device is connected to power!
- Disable and secure the system against any automatic restart or power on procedure!
- The device must be operated with the defined voltage level!
- Supply voltage jitters must not exceed the technical specifications and tolerances given in the technical manuals for the product. If you do not obey this issue, the proper performance of the device cannot be guaranteed. This can lead to fail functions of the device and in worst case to a complete breakdown of the device!
- You have to obey the current EMC regulations for wiring!
- All signal, control and supply voltage cables must be wired in a way, that no inductive or capacitive interference or any other severe electrical noise disturbance may interfere with the device. Wrong wiring can lead to a malfunction of the device!
- For signal or sensor cables you have to use shielded cables, to avoid damages through induction!
- You have to obey and to apply the current safety regulations given by the ÖVE, VDE, the countries, their control authorities, the TÜV or the local energy supply company!
- Obey country-specific laws and standards!
- The device must be used for the intended purpose of the manufacturer!
- No warranties or liabilities will be accepted for defects and damages resulting from improper or incorrect usage of the device!
- Subsequent damages, which results from faults of this device, are excluded from warranty and liability!
- Only the technical data, wiring diagrams and operation instructions, which are part to the product shipment are valid!
- The information on our homepage, in our datasheets, in our manuals, in our catalogues or published by our partners can deviate from the product documentation and is not necessarily always actual, due to constant improvement of our products for technical progress!
- In case of modification of our devices made by the user, all warranty and liability claims are lost!
- The installation has to fulfill the technical conditions and specifications (e.g. operating temperatures, power supply, ...) given in the devices documentation!
- Operating our device close to equipment, which do not comply with EMC directives, can influence the functionality of our device, leading to malfunction or in worst case to a breakdown of our device!

- Our devices must not be used for monitoring applications, which solely serve the purpose of protecting persons against hazards or injury, or as an emergency stop switch for systems or machinery, or for any other similar safety-relevant purposes!
- Dimensions of the enclosures or enclosures accessories may show slight tolerances on the specifications provided in these instructions!
- Modifications of this documentation is not allowed!
- In case of a complaint, only complete devices returned in original packing will be accepted!

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4 General Information

We produce two different lines of USB products: An USB power supply to load and supply USB devices like a tablet computer, smart phone or mini computer like a Raspberry Pi from a control cabinet or distribution panel. Two USB to serial converters with RS232 or RS485 signal outputs. One in a DIN rail housing for mounting into a control cabinet or distribution panel and one in a box housing for desktop or other applications.

Here you will find a brief overview of the basic highlights of our USB devices:

RESI-USB-PS:

- USB power supply with max. 900mA output current on the USB.
- Connection of the USB device with two micro USB B plus in the housing: One is designed to connect an USB device under the control cabinets 45mm cut-out, so that you cannot see the USB cable. And the other USB plug is in front of the enclosure, so that you can plug the cable through the 45mm cut-out of the control cabinet to supply devices in the cabinets door or outside of the cabinet.
- Primary zoom voltage input 12..48Vdc.
- Overload display if the USB current is higher than700mA with an Overload LED in the enclosure
- We supply two cables with this product: A cable from micro USB B female to USB A male to connect any standard USB device with an USB A male power cable. Another cable with USB A male to micro USB B male to load or supply devices with an build in micro USB B female plug.
- The device is mountable onto the EN50022 DIN rail in a control cabinet.

RESI-USB-SIO, RESI-USB-BOX

- Serial converter from USB1.1/USB2.0 to RS232 or RS485
- Chipset: Silicon Labs CP2103
- Host baud rate: 300 to 1Mbaud, automatic RX/TX flow control, data bits : 5,6,7 or 8 bits, stop bits: 1,1.5 or 2 bits, parity: odd, even, mark, space or no parity, 576 bytes receive buffer, 640 bytes transmit buffer
- RESI-USB-SIO: Connection of the RS232 or RS485 bus interface through build-in clamps
- RESI-USB-BOX: Connection of the RS232 or RS485 bus interface with a removeable 3pin clamp (1-3). To change the serial mode a switch is build-in into the enclosure.
- Primary power supply via USB
- RESI-USB-SIO: Mountable onto the EN50022 DIN rail
- RESI-USB-BOX: External box enclosure

Type	Description	Voltage	Power	Weight
RESI-USB-PS	Power supply for an USB device with 12..48V= input voltage and 900mA output current on the USB Bus	12..48 V=	<6W	45 g
RESI-USB-SIO	Serial converter from USB1.1/USB2.0 to RS232 or RS485	USB		45 g
RESI-USB-BOX	Serial converter from USB1.1/USB2.0 to RS232 or RS485	USB		25 g

Technical data RESI-USB-PS			
Power supply			
Supply voltage	12..48 V= +/-10%	Storage temperature	-20...85 °C
Power LED	Yes	Operating Temperature	0...60°C
Power consumption	6W	Humidity	25...90 % rH not condensing
USB output		Protection Class	IP20 (EN 60529)
Connection	2xUSB B Micro plugs in the enclosure	Dimensions LxWxH	17,5mm x 90mm x 58mm
Output current	max. 900mA	Weight	45g
Overload-LED	Yes, >700mA	Mounting	on DIN EN50022 rail
Clamps		CE conformity	Yes
Clamp wire cross section	Max. 1,5 mm ²		
Tightening torque	Max. 0.5Nm		



Illustration: RESI-USB-PS

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Technical data			
RESI-USB-SIO			
Power supply			
Supply voltage	Via USB	Storage temperature	-20...85 °C
Connection	2xUSB B Micro plugs in the enclosure	Operating Temperature	0...60°C
Power LED	Yes	Humidity	25...90 % rH non-condensing
RS232 interface		Protection Class	IP20 (EN 60529)
Clamps	TX, RX, M-	Dimensions LxWxH	17,5mm x 90mm x 58mm
LED signals	Yes, for TX,RX	Weight	45g
RS485 interface		Mounting	on DIN EN50022 rail
Clamps	A+, B-, M-	Chipset	Silicon Labs CP2103
LED signals	Yes, for TX,RX		
Clamps			
Clamp wire cross section	Max. 1,5 mm ²	CE conformity	Yes
Tightening torque	Max. 0.5Nm		



Illustration: RESI-USB-SIO

Technical data			
RESI-USB-BOX			
Power supply			
Supply voltage	Via USB	Storage temperature	-20...85 °C
Connection	2xUSB B Micro plugs in the enclosure	Operating Temperature	0...60°C
Power LED	Yes	Humidity	25...90 % rH non-condensing
RS232 interface		Protection Class	IP20 (EN 60529)
Clamps	1=TX, 2=RX, 3=GND	Dimensions LxWxH	17,5mm x 90mm x 58mm
LED signals	Yes, for TX,RX	Weight	45g
RS485 interface		Mounting	on DIN EN50022 rail
Clamps	1=A+, 2=B-, 3=GND	Chipset	Silicon Labs CP2103
LED signals	Yes, for TX,RX		
Selection of RS232 or RS485 mode via build-in switch in the enclosure			
Clamps		CE conformity	
Clamp wire cross section	Max. 0,8 mm ²	Yes	
Tightening torque	Max. 0.5Nm		



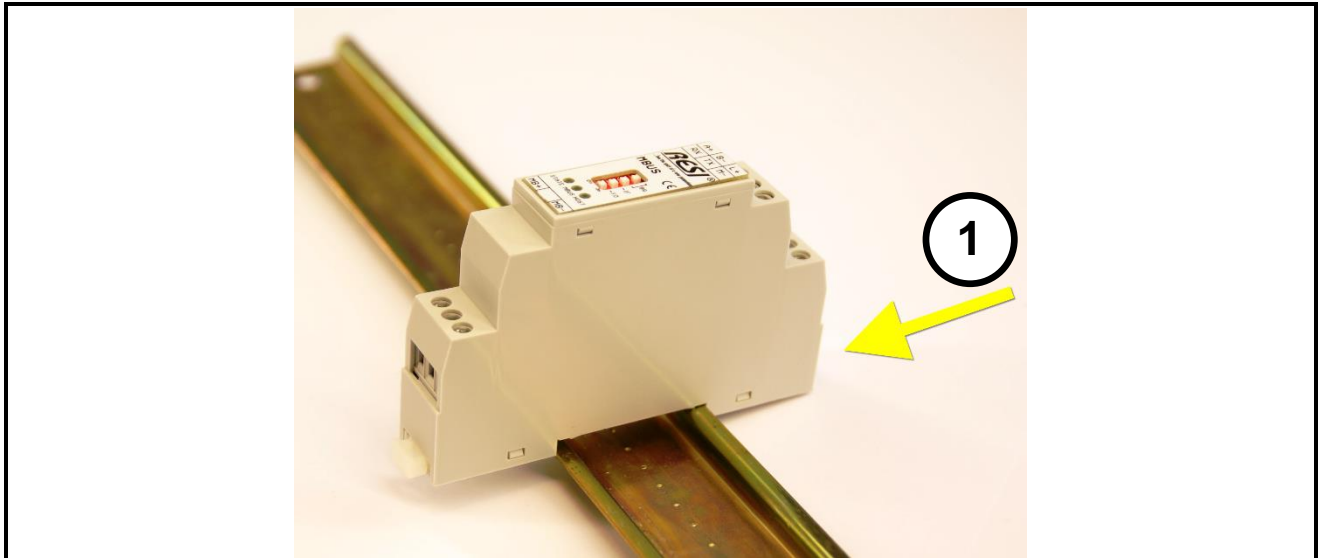
Illustration: RESI-USB-BOX

5 Mounting and Connections

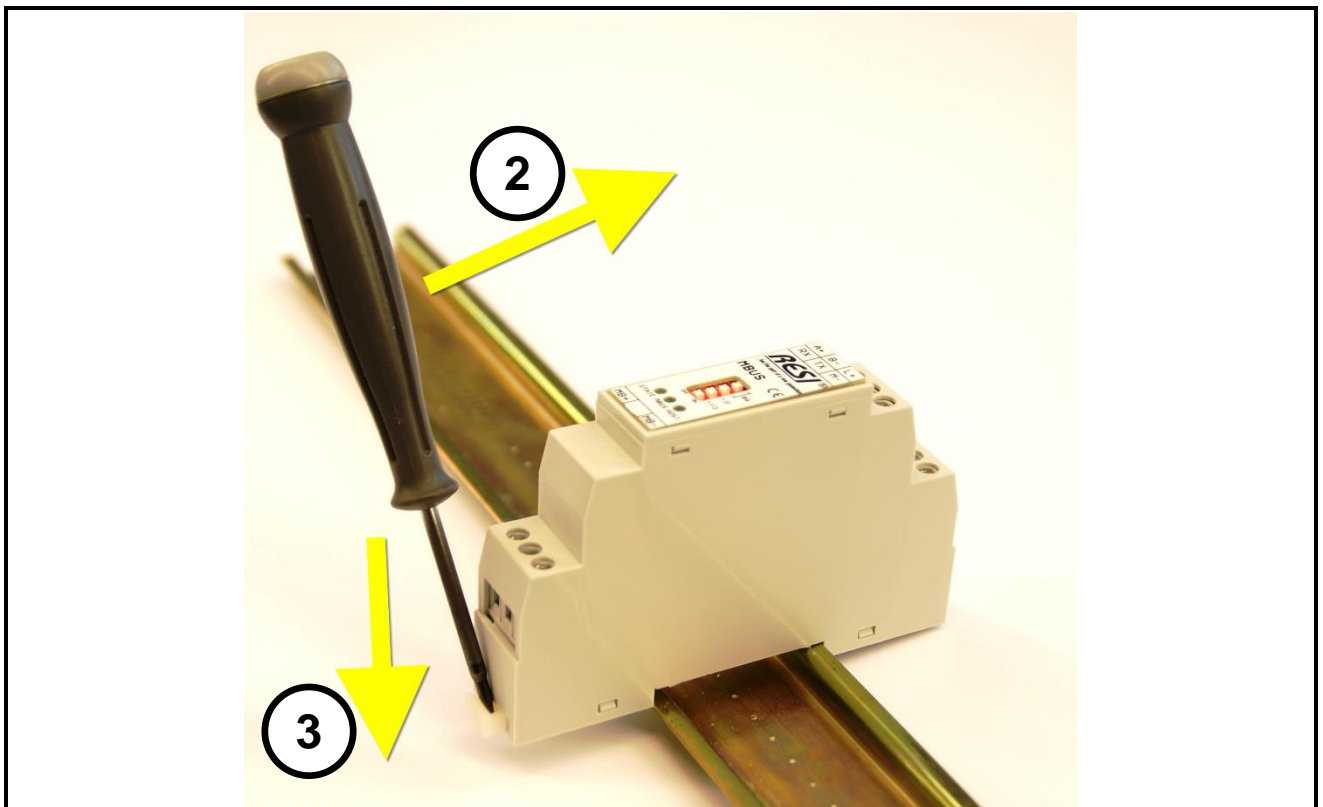
5.1 Assembling

Our RESI-USB-SIO converter and our RESI-USB-PS power supplies are designed for mounting on a 35mm DIN-EN50022 rail. Please note, that there are symbol photos used in the mounting pictures below.

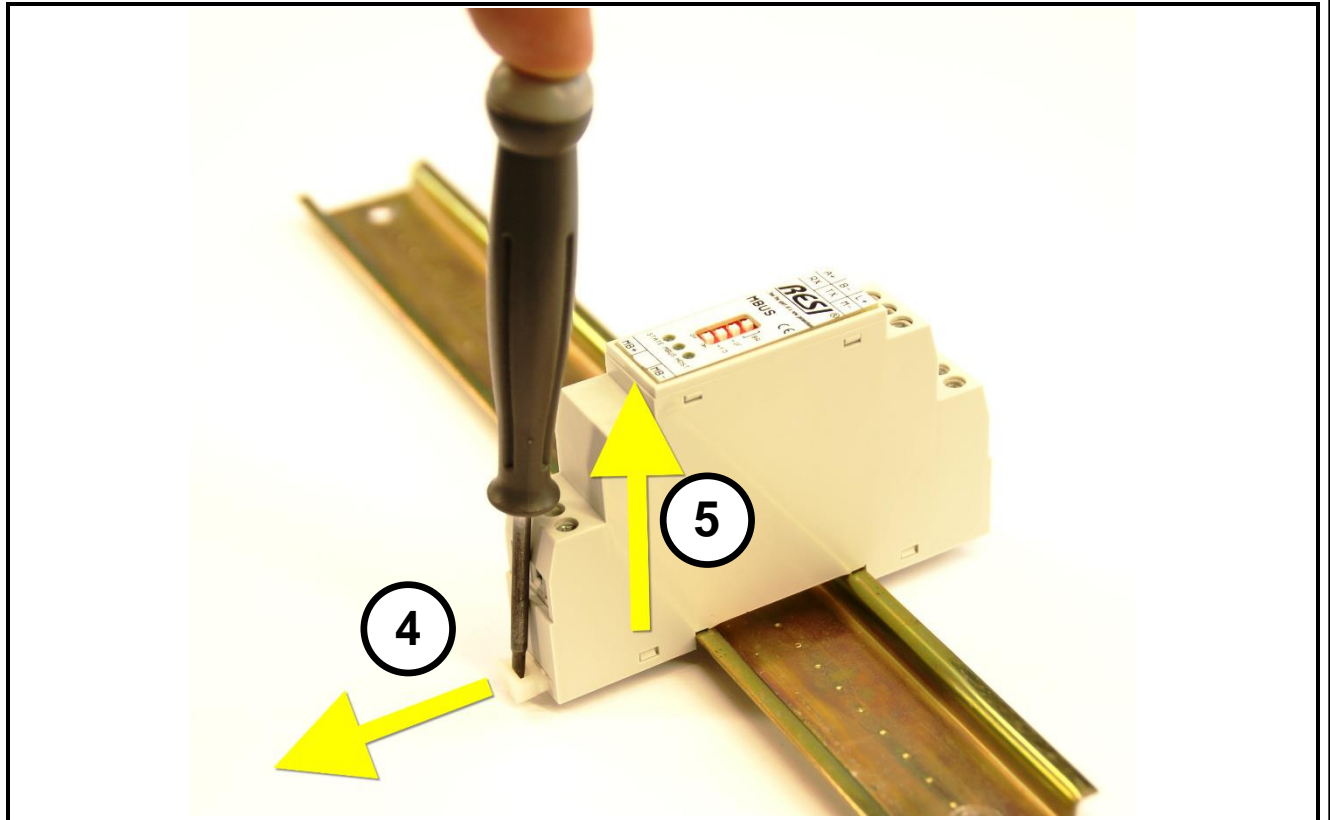
At first, put the converter with the top side on the DIN rail (1).



Then open the clamp lever on the bottom side with a screw driver (2) and press the device on the DIN rail (3). Release the clamp lever. The module is now placed correctly on the DIN rail.



To dismount the module from the DIN rail first open the clamp lever with a screwdriver on the bottom side (4). Hold the clamp lever opened while you lift the module from the DIN rail (5). Then remove the converter from the bar with while pulling it on the top side.



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5.2 Clamps & LEDs

RESI-USB-PS	
L+ M-	Power supply L+: 12..48 V= M-: Ground
USB B micro plugs	Interface to USB devices
POWER	Power-LED, is ON, if the device is under power
OL	Overload-LED: Indicates, that the USB output current is higher than 700mA.

Table: Description of the connectors and LED indicators of the RESI-USB-PS power supply

RESI-USB-SIO	
USB B micro plugs	Connection to the USB host
RX TX M-	RS232 interface with clamps RX: RS232 receive data TX: RS232 transmit data M-: RS232 ground
A+ B- M-	RS485 interface with clamps A+: RS485 DATA+ signal B-: RS485 DATA- signal M-: RS485 ground
POWER	Power-LED, is ON, if the device is under power
TX, RX	Communication LEDs, indicate, if the module currently sends or receives data via RS232/RS485

Table: Description of the connectors and LED indicators of the RESI-USB-SIO converter

RESI-USB-BOX	
USB B micro plugs	Connection to the USB host
1 2 3	In RS232 mode (switch in direction to USB cable) the clamps have the following layout: 1=RX: RS232 data receive 2=TX: RS232 data transmit 3=GND: RS232 ground In RS485 mode (switch in direction to clamps) the clamps have the following layout: 1=A+: RS485 DATA+ signal 2=B-: RS485 DATA- signal 3=GND: RS485 ground
POWER	Power-LED, is ON, if the device is under power
TX, RX	Communication LEDs, indicate, if the module currently sends or receives data via RS232/RS485

Table:: Description of the connectors and LED indicators of the RESI-USB-BOX converter

5.3 Wiring diagram RESI-USB-PS

In the below illustration you see the wiring of the USB Power supply.

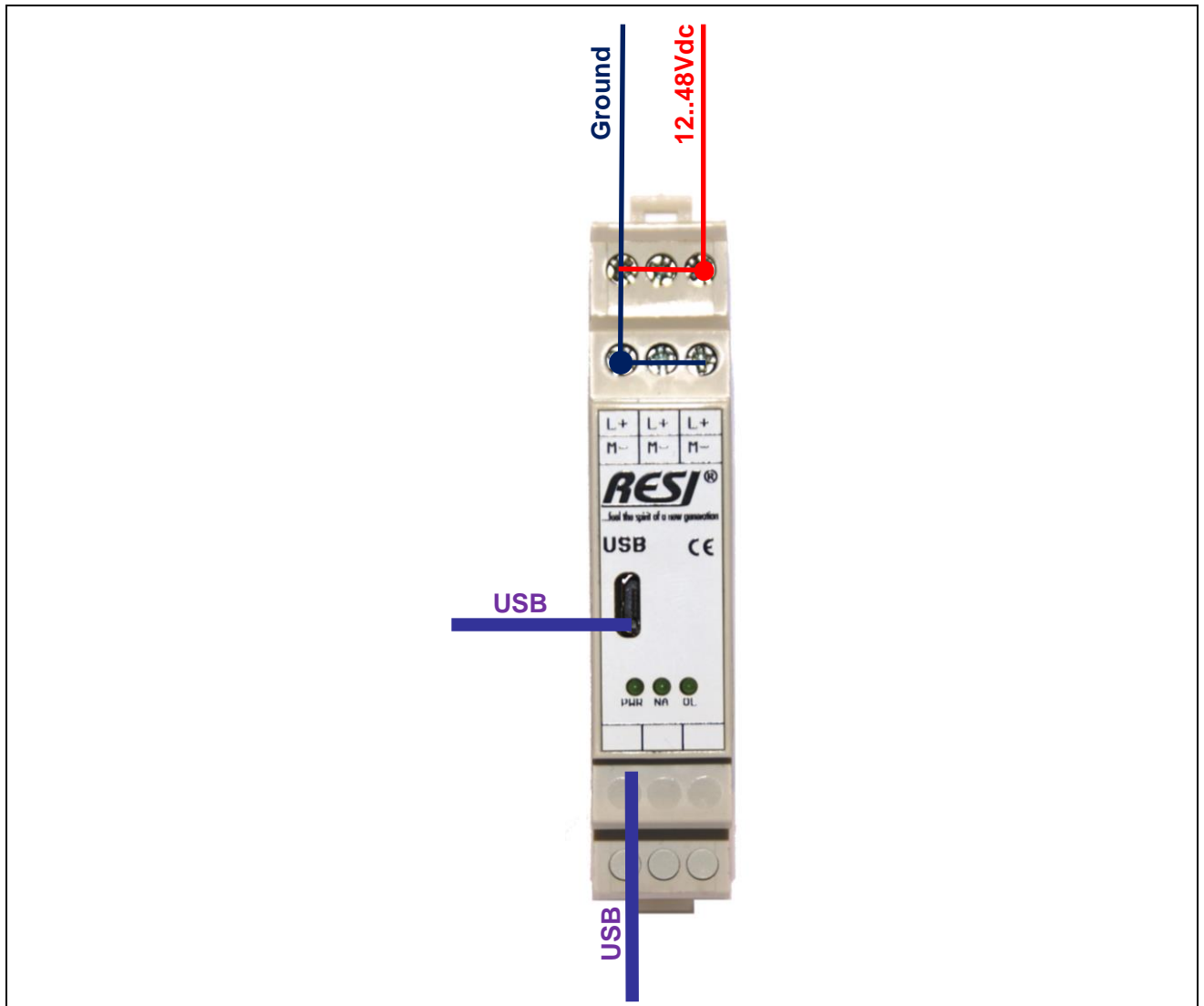


Illustration: Wiring of the RESI-USB-PS power supply

IMPORTANT SAFETY INFORMATION:

It is NOT allowed to plug an USB cable into both USB jacks simultaneously! It is only allowed to use only one USB plug at a time. Both jacks are only for two different wiring possibilities: One for wiring under the 45mm window of s control cabinet and one for wiring through the cut-out of the 45mm window of the control cabinet. If you use both USB jacks at the same time, you can destroy the USB power supply completely!

In the below picture you will see the two possibilities to connect an USB cable to our module:



Illustration: Outlet of the USB cable through the 45mm window to the front of a control cabinet to connect external placed USB devices



Illustration: Outlet of the USB cable under the 45mm cut-out of a control cabinet to hide the cable under the front cover of the cabinet when connecting components inside the cabinet

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5.4 Wiring diagram RESI-USB-SIO

In the below illustration you see the wiring of the USB Converter RESI-USB-SIO.

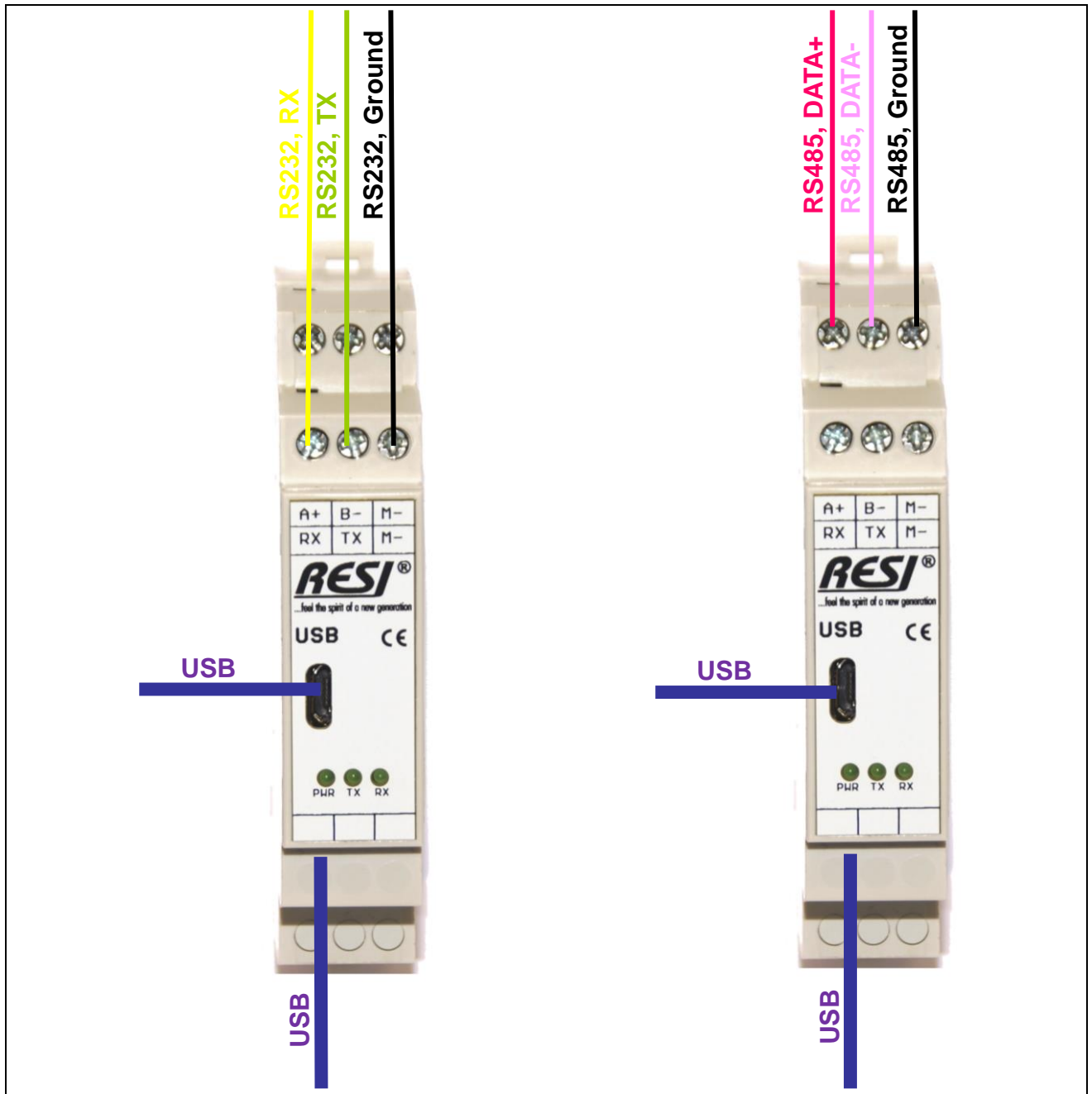


Illustration: Wiring of the RESI-USB-SIO converter

IMPORTANT SAFETY INFORMATION:

It is NOT allowed to plug an USB cable into both USB jacks simultaneously! It is only allowed to use only one USB plug at a time! Both jacks are only for two different wiring possibilities: One for wiring under the 45mm window of s control cabinet and one for wiring through the cut-out of the 45mm window of the control cabinet. If you use both USB jacks at the same time, you can destroy the USB converter and the connected USB host completely!

In the below picture you will see the two possibilities to connect an USB cable to our module:



Illustration: Outlet of the USB cable through the 45mm window to the front of a control cabinet to connect external placed USB devices



Illustration: Outlet of the USB cable under the 45mm cut-out of a control cabinet to hide the cable under the front cover of the cabinet when connecting components inside the cabinet

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5.5 Wiring diagram RESI-USB-BOX

In the below illustration you see the wiring of the USB Converter RESI-USB-BOX.

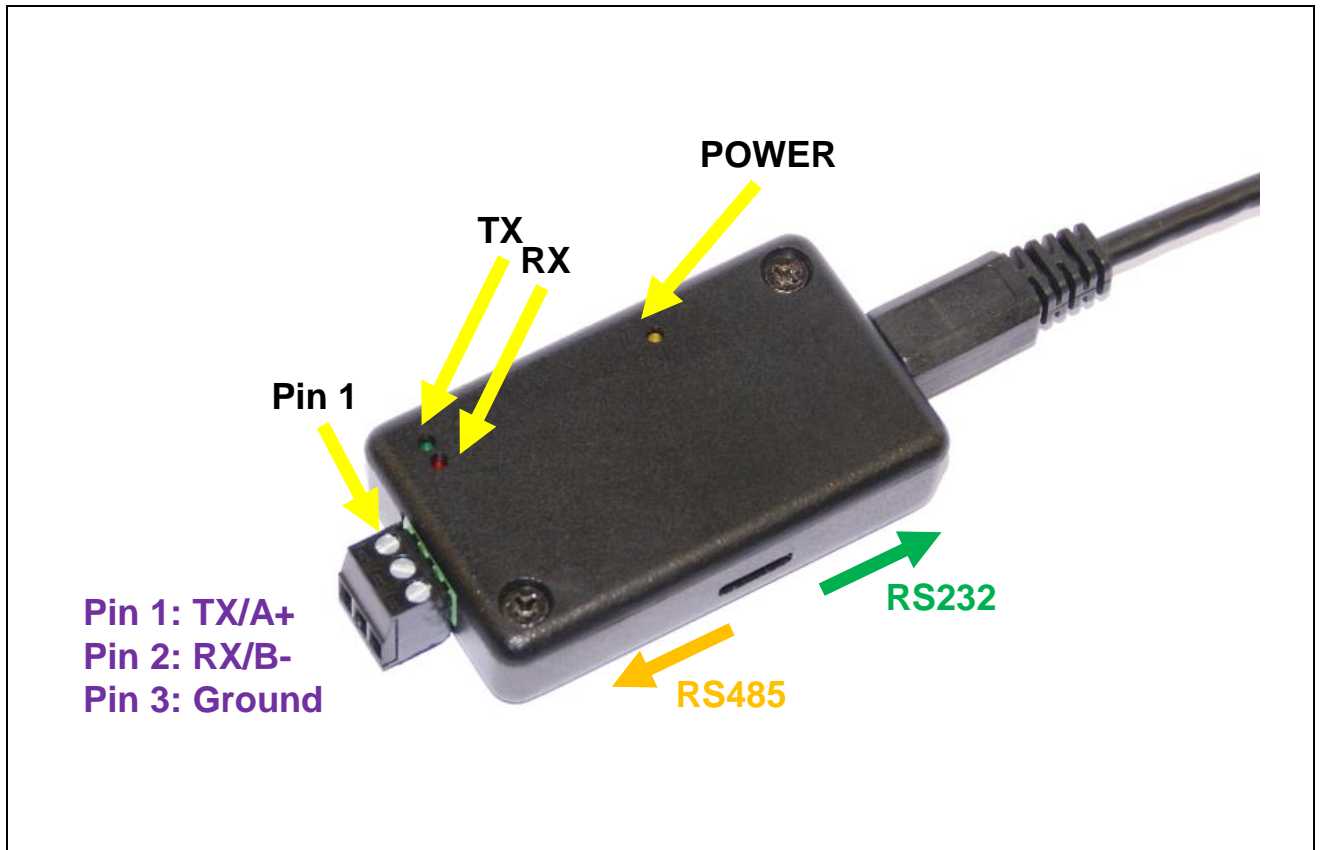


Illustration: Wiring of the RESI-USB-BOX converter

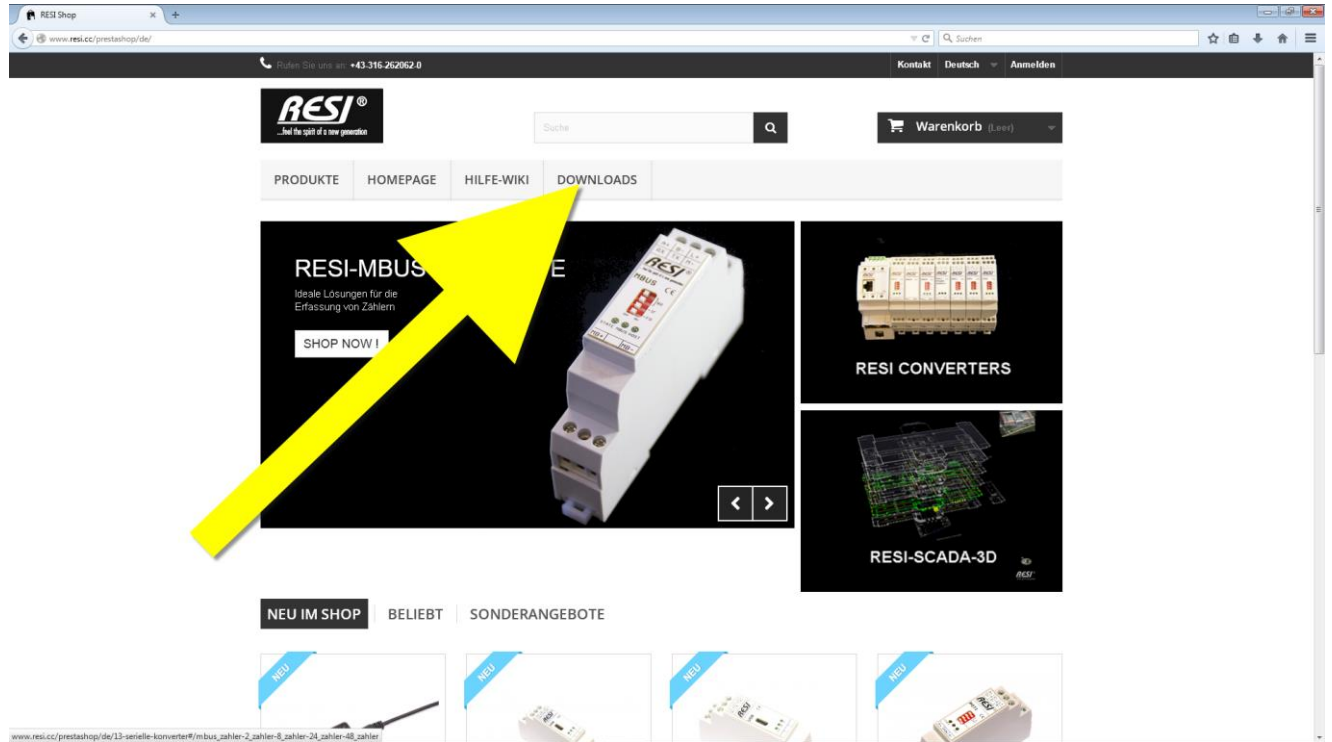
IMPORTANT SAFETY INFORMATION:

Always make sure, that the interface selection switch (RS232 or RS485) is in correct position, before you connect your serial device to the converter. A wrong position of the switch generates wrong signal levels on the clamps and may harm or destroy your connected serial equipment and maybe also our USB converter!

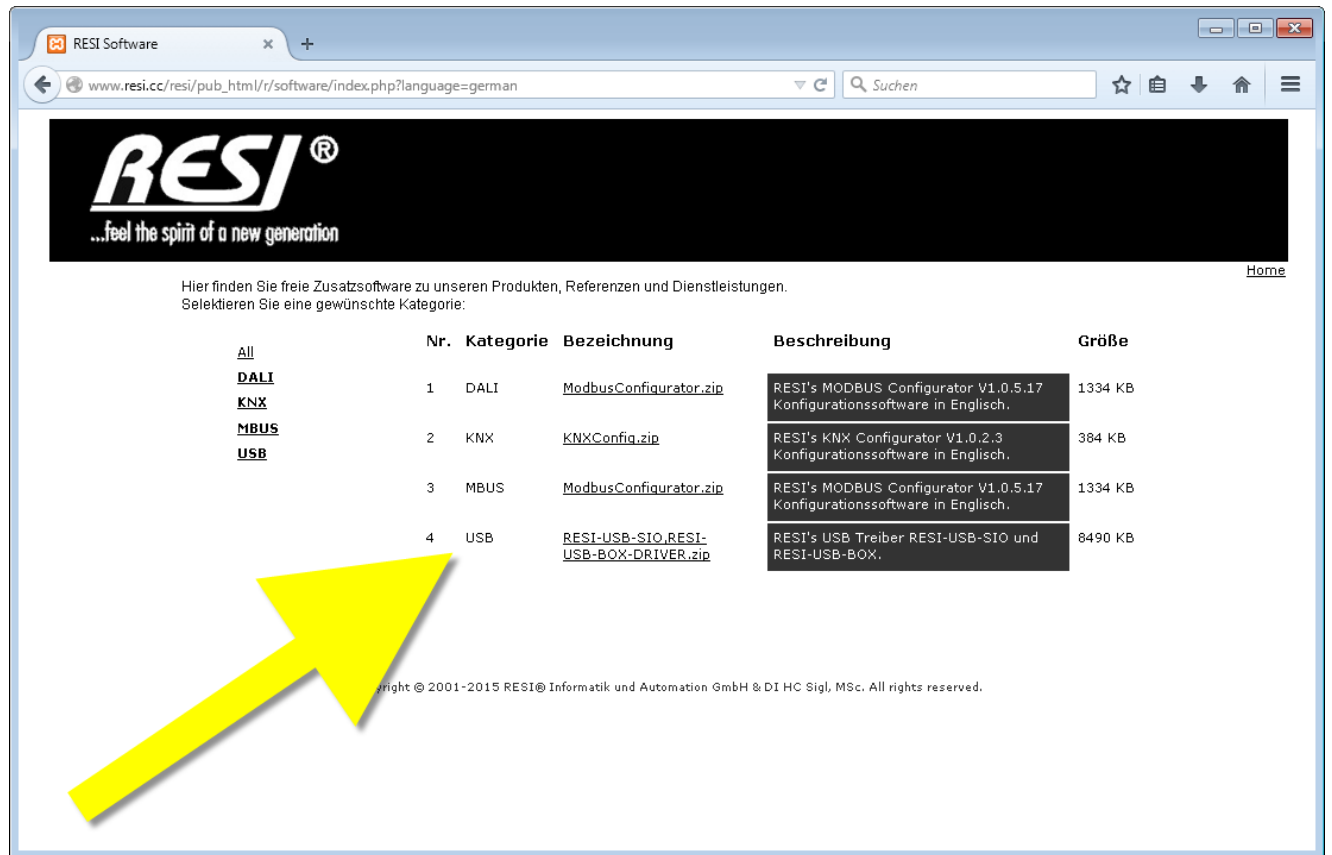
6 Driver software

For both of our converters we publish on our homepage www.RESI.cc the actual drivers for download.

Click onto Downloads:



You get the following picture:



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Here you will find always the actual package with software drivers for our USB converters. We use the Silicon Labs® CP2103 chipset. So you can also download the current drivers on the homepage of the manufacturer; <https://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx>

The chipset supports the following operating systems:

- Windows XP/Server 2003/Vista/7/8/8.1 (v6.7)
- Windows 2K (v6.3a)
- WinCE 5.0
- WinCE 6.0
- Macintosh OSX (v4)
- Linux 3.x.x
- Linux 2.6.x
- Android 4.2

The screenshot shows the Silicon Labs website page for USB to UART Bridge VCP Drivers. The page title is "CP210x USB to UART Bridge VCP Drivers". The main content area contains several sections for downloading drivers for different operating systems:

- Download for Windows XP/Server 2003/Vista/7/8/8.1 (v6.7)**: Includes download links for VCP (3.06 MB) and VCP Release History.
- Download for Windows 2K (v6.3a)**: Includes download links for VCP (4.79 MB) and Win2K VCP Release History.
- Download for WinCE**: Includes download links for WinCE 6.0 (276 KB) and WinCE 5.0 (271 KB), each with a corresponding Release History link.
- Download for Macintosh OSX (v4)**: Includes download links for VCP (826 KB) and Mac VCP Release History.
- Download for Linux**: Includes download links for Linux 3.x.x (10.0 KB) and Linux 2.6.x (10.3 KB), each with a corresponding Release History link. A note states: "Note: The Linux 3.x.x version of the driver is maintained in the current Linux 3.x.x tree at www.linuxmtd.org."
- Download for Android**: Includes an application note for "Android: Integrating the CP210x Virtual COM Port Driver into the Android Platform".

The page also features a sidebar with navigation links such as "Find Products Fast", "Get Support & Tools", and "Need Help?". The footer contains social media icons and contact information.

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7 Specifications

7.1 Dimensions RES-USB-PS, RESI-USB-SIO

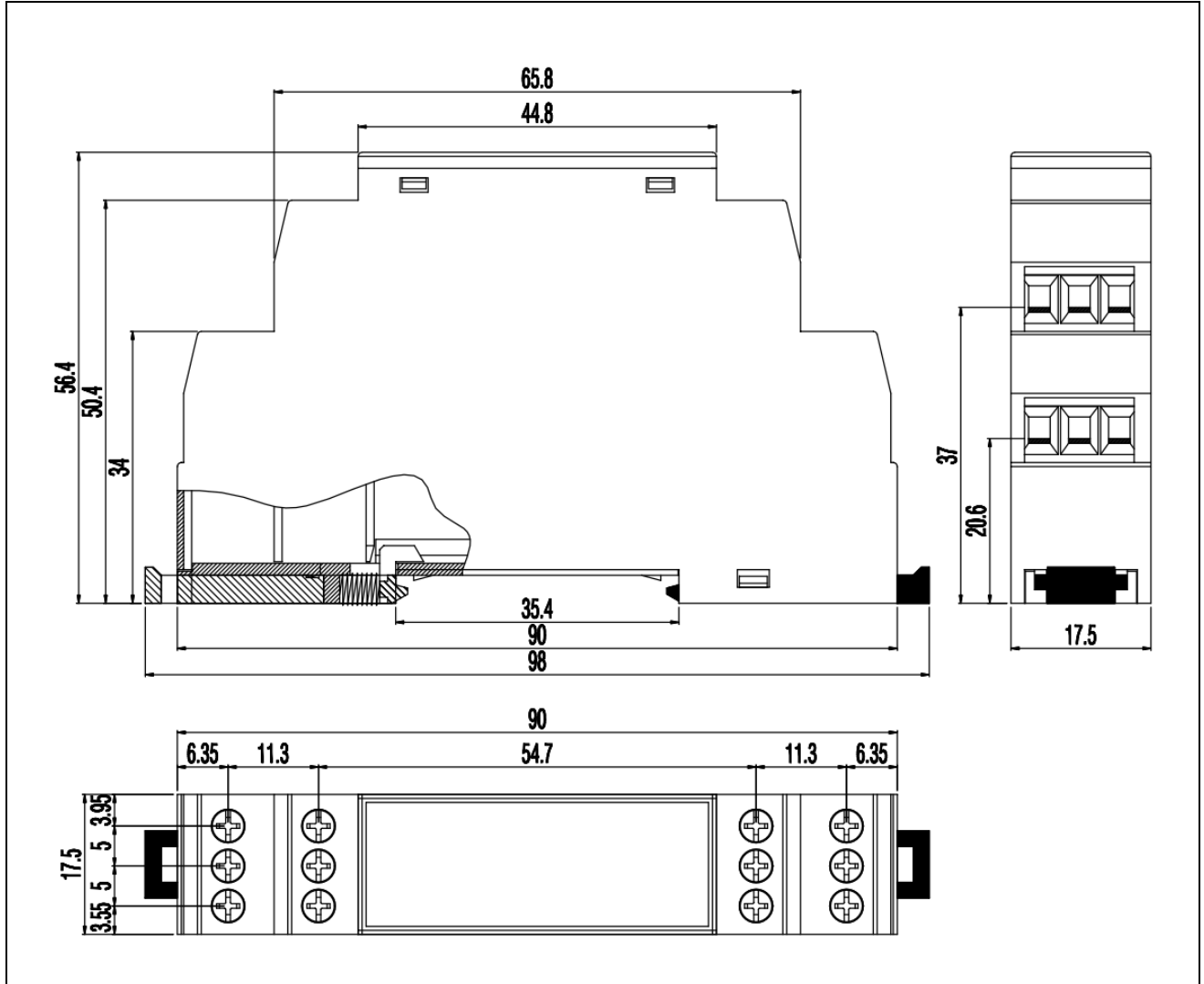


Illustration: dimension illustration of the RESI-USB-PS, RESI-USB-SIO enclosure in mm

Dimensions	
Enclosure dimensions L x W x H (mm)	17,5 x 90 x 58
Weight	60 g
Colour	Grey RAL7035
Material	PA - UL 94 V0
Protection class	IP20 based on DIN 40050/EN 60529

Table: Data of the RESI-USB-PS, RESI-USB-SIO enclosure

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7.2 Dimensions RESI-USB-BOX

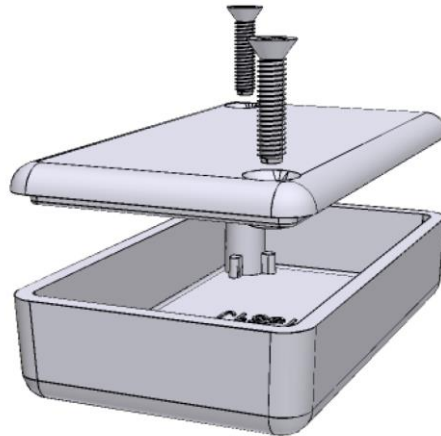
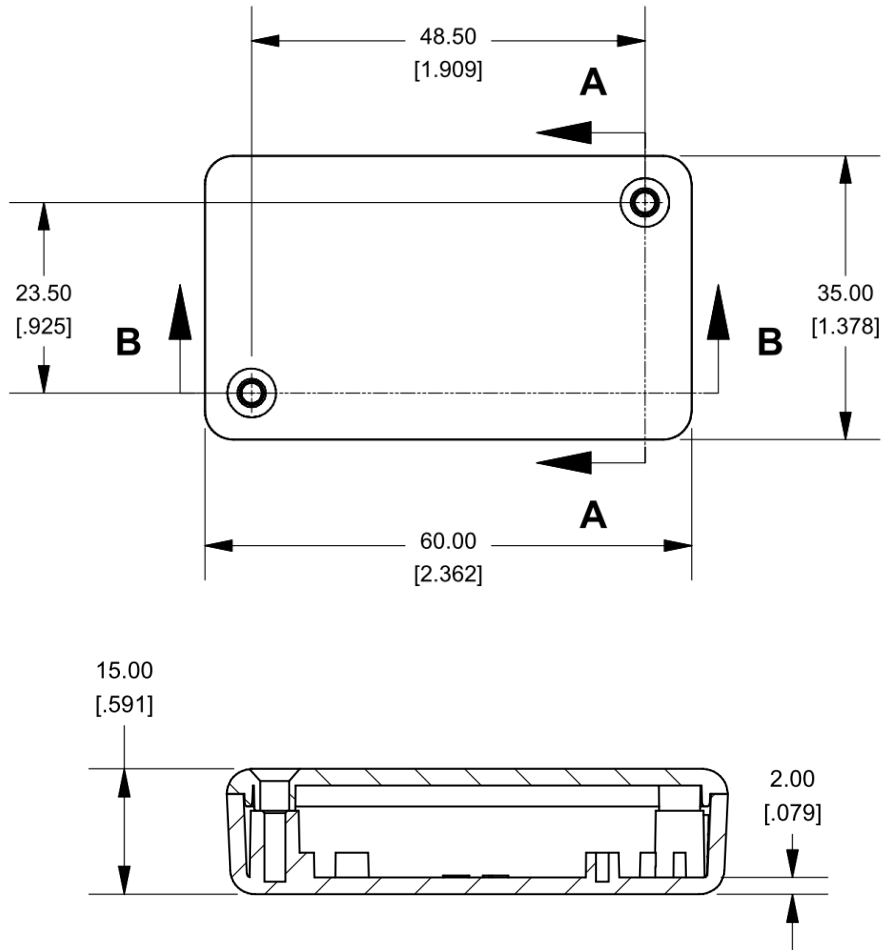


Illustration: dimension illustration of the RESI-USB-BOX enclosure in mm

Dimensions	
Enclosure dimensions L x W x H (mm)	70 x 35 x 15
Weight	25 g
Colour	Schwarz, RAL 9011
Material	ABS UL94-HB
Protection class	IP20 based on DIN 40050/EN 60529

Table: Data of the RESI-USB-BOX enclosure