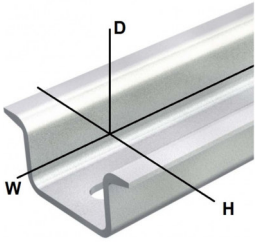
# USB-RS485-Converter-Adapter

USB-RS485-Converter-Adapter-Module

The USB-RS485-Converter-Adapter-Module is an adapter. This adapter was specially designed for connecting an RS485 bus system to a PC. The adapter is powered through the USB port and features an internal resettable fuse for short circuit protection. To ensure that neither the bus participants nor the USB port are damaged, the adapter is equipped with internal circuit insulation. In addition, it offers multi-stage overvoltage protection that protects the RS485 bus system and diverts the overvoltage to PE. For details on the connection, see the image under connection principle.




RoHS COMPLIANT

Key commercial data

| | |
|---|---|
| Packing unit | 1 pc |
| Weight per piece (excluding packing) | 60g |
| Weight per piece (including packing) | 70g |
| Country of origin | Germany |

Technical data mechanically

| | |
|---|---|
| Width (W) | 40mm |
| Height (H) | 92mm |
| Depth (D) | 62mm |
| Ambient temperature (operation) | 0°C … 50°C |
| Ambient temperature (storage/transport) | -20°C … 70°C |
| Relative humidity | 90% without condensation |
| Mounting position | any |
| Cable diameter shield connection | Ø3mm … Ø12mm |
| Tightening torque PCB terminal PE | 0,5Nm |

 Subject to change without notice 

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## Technical data electric

| | |
|---|---|
| Nominal voltage $U_N$ – Input side USB | 5V DC (± 5%) |
| Nominal current $I_N$ – Input side USB | max 500mA |
| Protection class | IP20 |
| Bus terminating resistor 120Ω | Fixed integrated |
| Short-circuit proof – Input side USB | Yes, resettable fuse |
| Overvoltage protection – Output side RS485 bus | Yes, discharge via PE |
| Galvanic isolation between input and output | Yes, 5000Vrms |
| Chipset | FTDI Chip – FT232RL |
| RS485 bus system | 2-wire |
| Connection data PCB terminal X1 | |
| Connection type | Push-in spring connection |
| Conductor cross section solid | 0,25mm$^2$ … 1,5mm$^2$ |
| Conductor cross section flexible | 0,25mm$^2$ … 1,5mm$^2$ |
| Conductor cross section with ferrule, with/ without plastic sleeve | 0,25mm$^2$ … 1,5mm$^2$ |
| Stripping length | 10mm |
| Connection data interface J1 | |
| Connection type | USB 2.0 type B |
| Connection data PCB terminal PE | |
| Connection type | Screw connection |
| Conductor cross section solid | 0,5mm$^2$ … 2,5mm$^2$ |
| Conductor cross section with ferrule, with/ without plastic sleeve | 0,5mm$^2$ … 2,5mm$^2$ |
| Stripping length | 8mm |

## Standards and Regulations

| | |
|---|---|
| Standards/regulations | EN IEC 61000-6-2: 2019 |
| | EN 61000-6-3: 2007 +A1:2011 +AC:2012 |
| | EN 50178: 10/97 |

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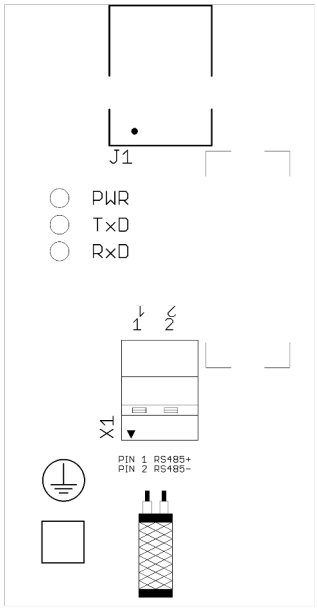
## PIN assignment




## Functionality of the device


When the connection work on the RS485 bus system is completed, the adapter can be connected to a PC (USB port) using a USB cable (not included in delivery). As soon as the adapter is connected to the PC, the power LED (PWR) should light up green. If the power LED does not light up and still does not light up after turning off the power, the device should be replaced. The two LEDs TxD and RxD light up orange/yellow when a corresponding data transfer is active.

The USB-RS485-Converter-Adapter is compatible with the most common operating systems. For more detailed information on compatibility, please visit the chipset manufacturer's website, where you can also download the corresponding device driver.

Manufacturer website FTDI Chip: https://ftdichip.com/products/ft232rl/#tab-drivers_tab
Manufacturer website driver: https://ftdichip.com/drivers/d2xx-drivers/

We Bachhaeubl Geraetebau assume no liability or warranty for third-party software or third-party drivers.

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## Safety regulations and installation notes

| | |
|---|---|
|  | WARNING: Danger to life by electric shock!<br>• Never carry out work when voltage is present.<br>• Protect the device against foreign bodies penetrating it. |
|  | NOTE: Danger if used improperly!<br>• The device is a built-in device.<br>• The IP20 degree of protection (IEC 60529/EN 60529) of the device is intended for use in a clean and dry environment. Do not subject the device to any load that exceeds the described limits.<br>• Observe mechanical and thermal limits.<br>• Ensure that the primary-side wiring and secondary-side wiring are the correct size and have sufficient fuse protection. |
|  | • It is not permissible to open or modify the device. Do not repair the device yourself but replace it with an equivalent device. Repairs may only be carried out by the manufacturer. The manufacturer is not liable for damage resulting from violation.<br>• The device may only be used for its intended use. |

## Pictures

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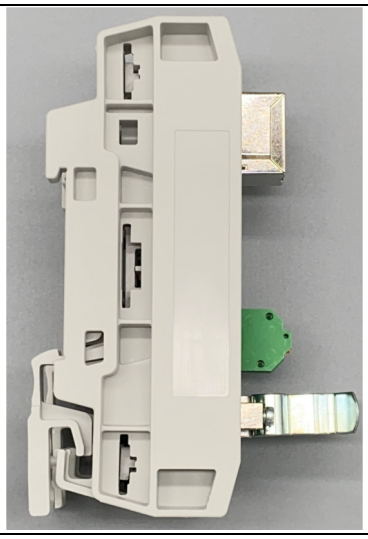

Connecting principle