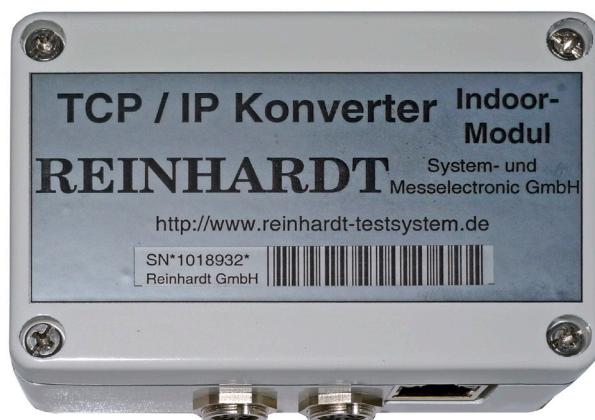


Manual

RS232 - TCP / IP Converter with XPico

for

Reinhardt Weather Stations

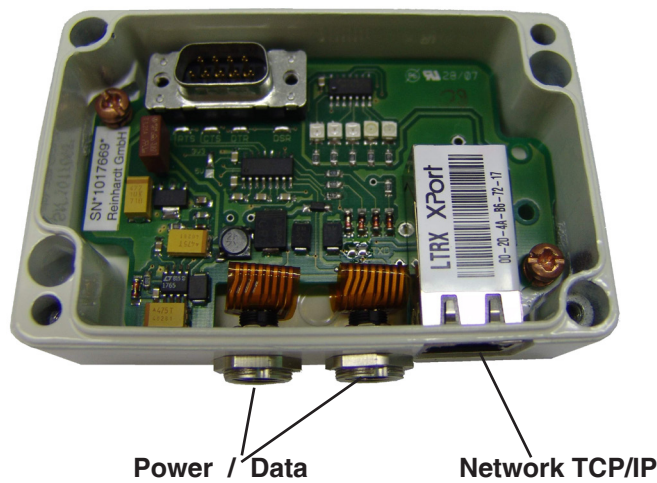


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RS232 - TCP/IP Converter indoor for Reinhardt weather stations



1 For compliance

1.1 Usage

The RS232 - TCP/IP-Converter for all Reinhardt Weather Stations and Sensors (MWS 10, MWS 55, MWS88 and Sensors with datalogger) contain a XPico-module, switching power supply for best efficiency, PoE interface and level converters for the RS232 serial port.

The RS232 - TCP/IP-Converter is built for connecting one or two Reinhardt weather stations or sensors with RS-232 port (or one weather station with RS-422 port) and converting it's serial protocol into a network protocol (TCP/IP) to integrate it into a network with an exclusive IP-address. This address is established by the integrated XPico module as well as two selectable ports (10001 and 10002 by default). To change the IP-address you easy can do this opening the module's Web-interface. With this IP-address the weather stations can be operated in the whole network or the internet.

Caution! Only one client can have access to the weather station over the IP-address, never more at the same time.

Power supply can be performed via PoE at the network interface or with the delivered cable with wall adaptor at the serial port.



Maximum supply voltage at serial port is 24 VDC!

1.2 Safety instructions



The instruments are manufactured in accordance with modern technical standards and can be operated without danger when used as directed.



Damage caused by non-observance of this operating manual can lead to forfeiture of warranty. REINHARDT System- und Messelectronic GmbH is not liable for subsequent damage.



REINHARDT System- und Messelectronic GmbH is not liable for damage of items or persons caused by improper handling or non-observance of the safety instructions! In such cases any guarantee claims shall become null and void.



Dear customer, the following safety and hazard notices not only protect your health, but also the appliance. Please read the following points carefully.



Do not leave the packaging material lying around. These parts are dangerous toys in the hands of children.

1.3 Mounting

The RS232 - TCP/IP-Converter is placed near a router or a switch.

2 Commissioning

2.1 Hardware Installation

The RS232 - TCP/IP-Converter is either connected to the standard cable of you weather station or sensor (7-pole connector and additional power supply unit) and supplied by it or via PoE by the network cable.

For supplying the converter via PoE you'll need a router or switch supporting PoE (Power over Ethernet).

The weather stations are also connected directly to the RS232 - TCP/IP-Converter (second and third 7-pole connector) by a patch cable (pins 1,3,4, and 5 are connected through).

The network cable (patch cable) connecting a router or switch is plugged into the third connector.



Please do not use any tools to fasten the connectors in order to avoid the connectors working themselves loose due to too big force when fastening the connectors!!

2.2 Software Installation

For operating the weather stations a comfortable software which allows storing data via COM-port or via the RS232 - TCP/IP-Converter is included.

Using the RS232 - TCP/IP-Converter enables the software to store data via a network or the internet. For using internet connection you use a provider like [DYNDNS](#). After creating an account on the provider's site you can establish a connection between your DYNDNS-client and the weather station via your router and get the data of your weather station worldwide.

PLEASE NOTE THAT ONLY ONE CLIENT CAN GET ACCESS TO THE WEATHER STATION, NOT MORE AT THE SAME TIME.

Installation of the weather software is described in the respective manuals contained on the weather USB-Stick.

2.3 Configuration of RS232 - TCP/IP Converter

To change the settings of your RS232 - TCP/IP-Converter on the supplied USB-Stick you'll find the DeviceInstaller from Lantronix, the documentation of the XPico module, which is built in the RS232 - TCP/IP-Converter and also a link to Lantronix, where you can find the latest documentation and firmware for your XPico module.

<https://www.lantronix.com/products/xpico/>

To perform this you connect your RS232 - TCP/IP-Converter to any router or switch in your network (with a patch cable) and let the Device Installer search for components in your network. When finished the search please select the XPico module.

In the next window only accept, no password is needed.

Now you should see the Web-Interface of your RS232 - TCP/IP-Converter and you can perform your desired settings.

For details please read the respective manuals of LANTRONIX also stored on the USB-Stick.

2.31 Configuration of the RS232 - TCP/IP converter via the serial port (RS-232)

If the RS232 - TCP/IP-Converter is not yet set on your desired IP-address and you cannot get access to the Web-Interface, you may perform the settings via the COM-port.

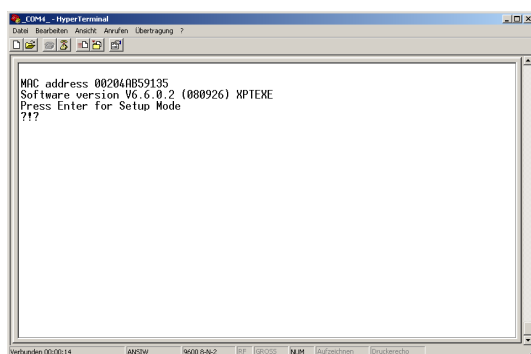
To perform this please connect the RS232 - TCP/IP-Converter with the ready made cable to a COM-port of your computer with a **null modem adaptor**.

With RS-422 you invert the 4 data cables of the RS232_RS422_converter to realize the null modem function instead the use of a null modem adaptor.

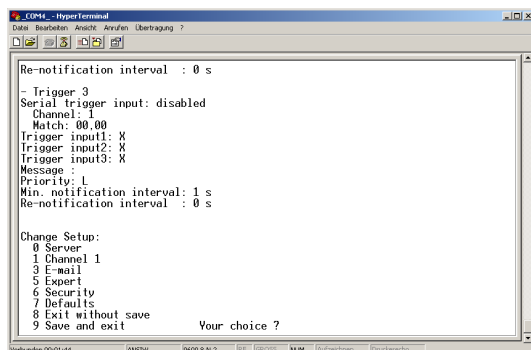
Then start a terminal software, i.e. hyperterm with 9600baud, no parity, 8 bits, no handshake. Then insert the PSU to the mains and press 3 times a lower case x (or hold the x-key) within the next 5 seconds.

The following screen will appear:

After this please press the ENTER key within the next 3 seconds.



The menu shown below will appear and you can perform the desired settings.

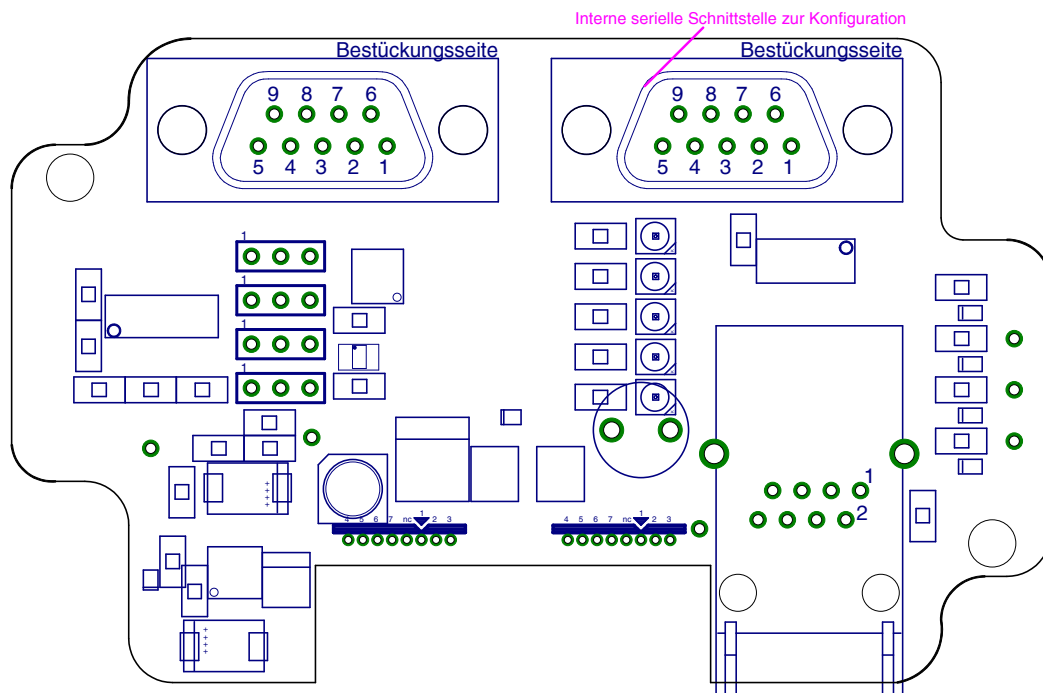


2.32 Configuration of the RS232 - TCP/IP converter via the internal serial port (RS-232)

If your TCP/IP converter is equipped with a RS-422 port you may perform the settings via the serial port RS-232 also with the internal serial port.

To perform please remove the top cover and connect a serial 1:1 cable with 2 female 9-pole connectors to the right internal serial port. The other connector you plug into the serial port of a computer.

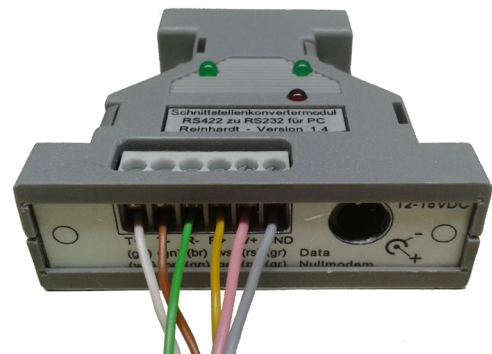
CAUTION: Only the 1:1 cable is allowed to be connected to the serial port. The powering cable or the cable to the weather station must not be connected to a serial port when configuring the unit! Then you perform as described under 2.31



2.33 Connection of an external RS232-422 converter

Data mode (normal mode)

Nullmodem mode (for settings via CLI)



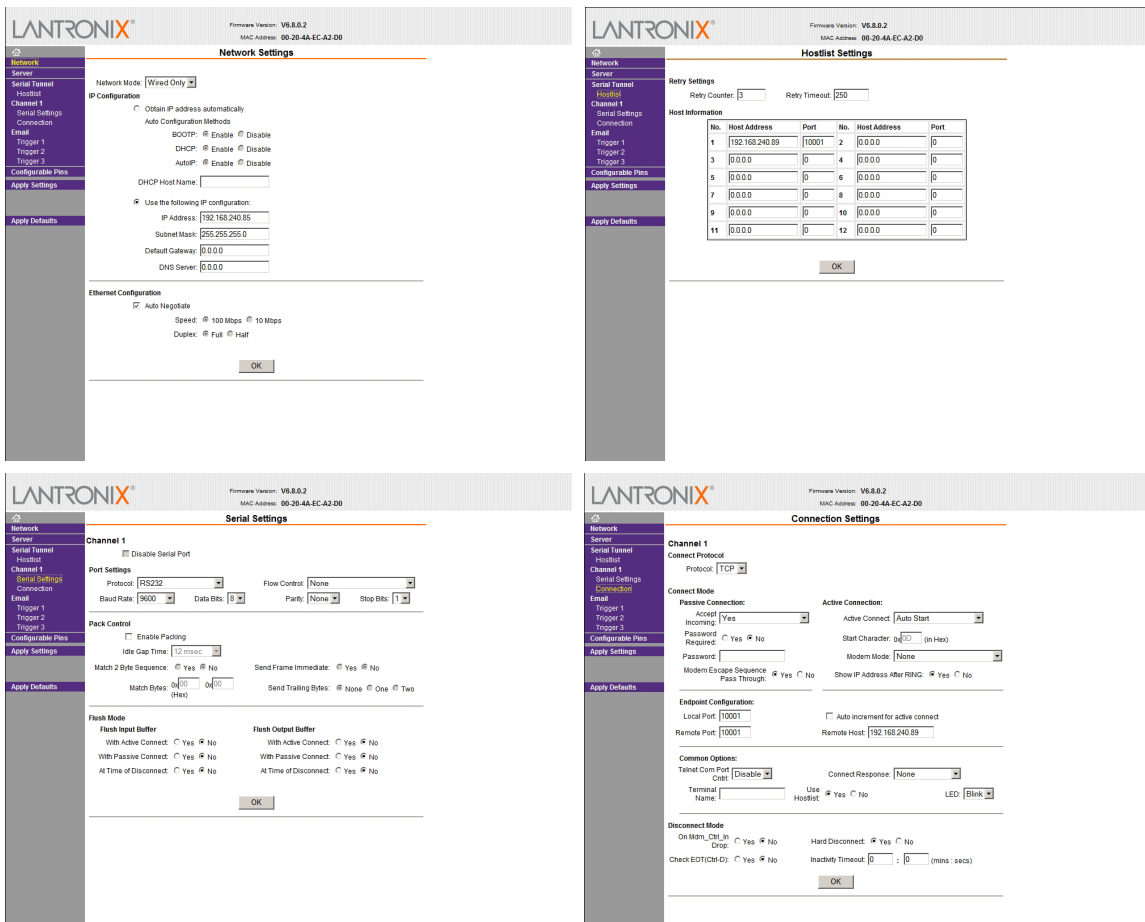
Manual RS232 - TCP/IP Converter for Weather Stations

2.4 Tunnelling with RS232 - TCP/IP Converter

You can use two RS232 - TCP/IP-Converters as a cable replacement tunneling weather data through a network. This means that you connect the first RS232 - TCP/IP-Converter to the COM-port of your weather station and to a router / switch of your network. A second RS232 - TCP/IP-Converter is connected to a router / switch at another place in your network a converts the data back to a RS232 string to connect a weather display with serial port for example.

To perform this you need to configure your RS232 - TCP/IP-Converters for tunnel operation. Below you can see an example for the respective settings in the Web-Interface:

Further information you'll find in the documentation of the [XPort](#).



2.5 Changing the baud rate

The TCP/IP-Converter is set to 9600 baud by default. Also the connected weather station is set to 9600 baud.

You can change the baud rate by sending the command `!Bx` to the weather station, where `x` is the code for the baud rate (5=9600Baud, 6=19200, 7=38400, 8=57600 und 9=115200).

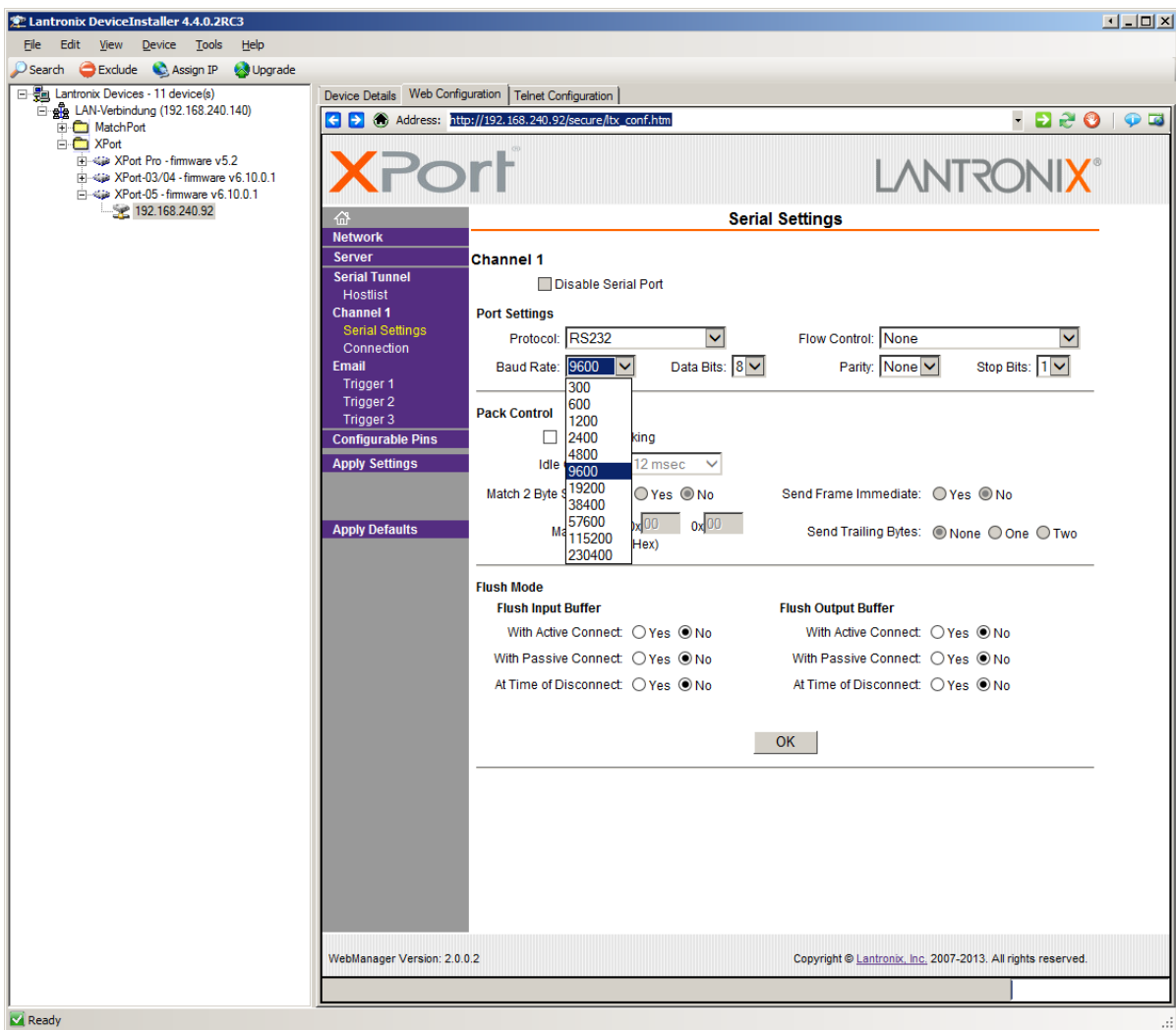
Please refer to the respective weather station's manual to check which baud rates are supported by your weather station.

After changing the baud rate of the weather station you need to change the TCP/IP-converter's baud rate too. To perform please access the converter's WEB interface by inserting the converter's IP address in a browser or using the Lantronix Device Installer (on the weather CD).

The baud rate can be changed under "Serial Settings" and "Baud Rate".

After changing the baud rate choose "OK" and then "Apply Settings".

The TCP/IP-converter now restarts and saves the new baud rate.



3 Connecting the RS232 - TCP/IP Converter to an existing cable

If you already have got a REINHARDT weather station connected to the serial port of a PC, you may extend your installation with the RS232 - TCP/IP converter without the need to install new cables.

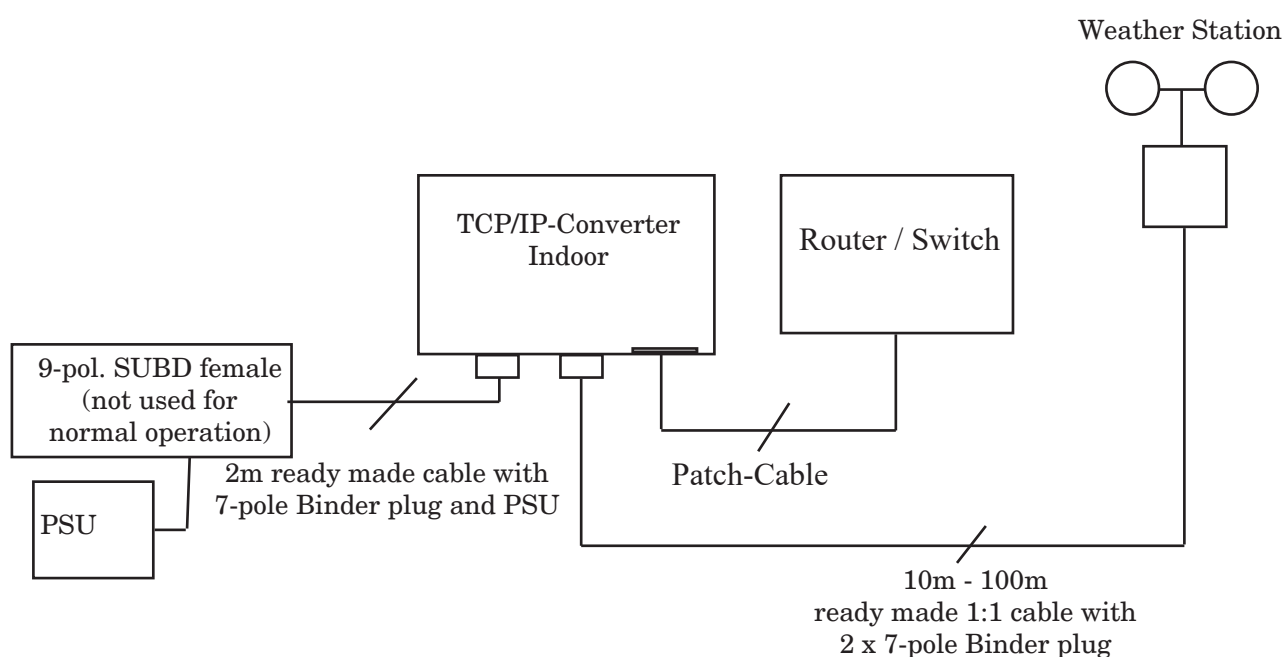
To perform this you only need a REINHARDT standard power cable with wall adaptor 18VDC and RS232 connector for powering the RS232 - TCP/IP converter and an adaptor (2 x male 9-pole D-SUB connectors) to couple the serial plug of the existing cable and the power cable of the RS232 - TCP/IP converter.

When installed the RS232 - TCP/IP converter the weather station now has got an IP-address for accessing via a network.

4 Connection schematics

4.1 Standard connection

Below you see the standard connection of the TCP/IP converter indoor.
Both the weather station and the TCP/IP converter are powered by the same PSU unit.



4.2 Afterwards connection to an existing weather station

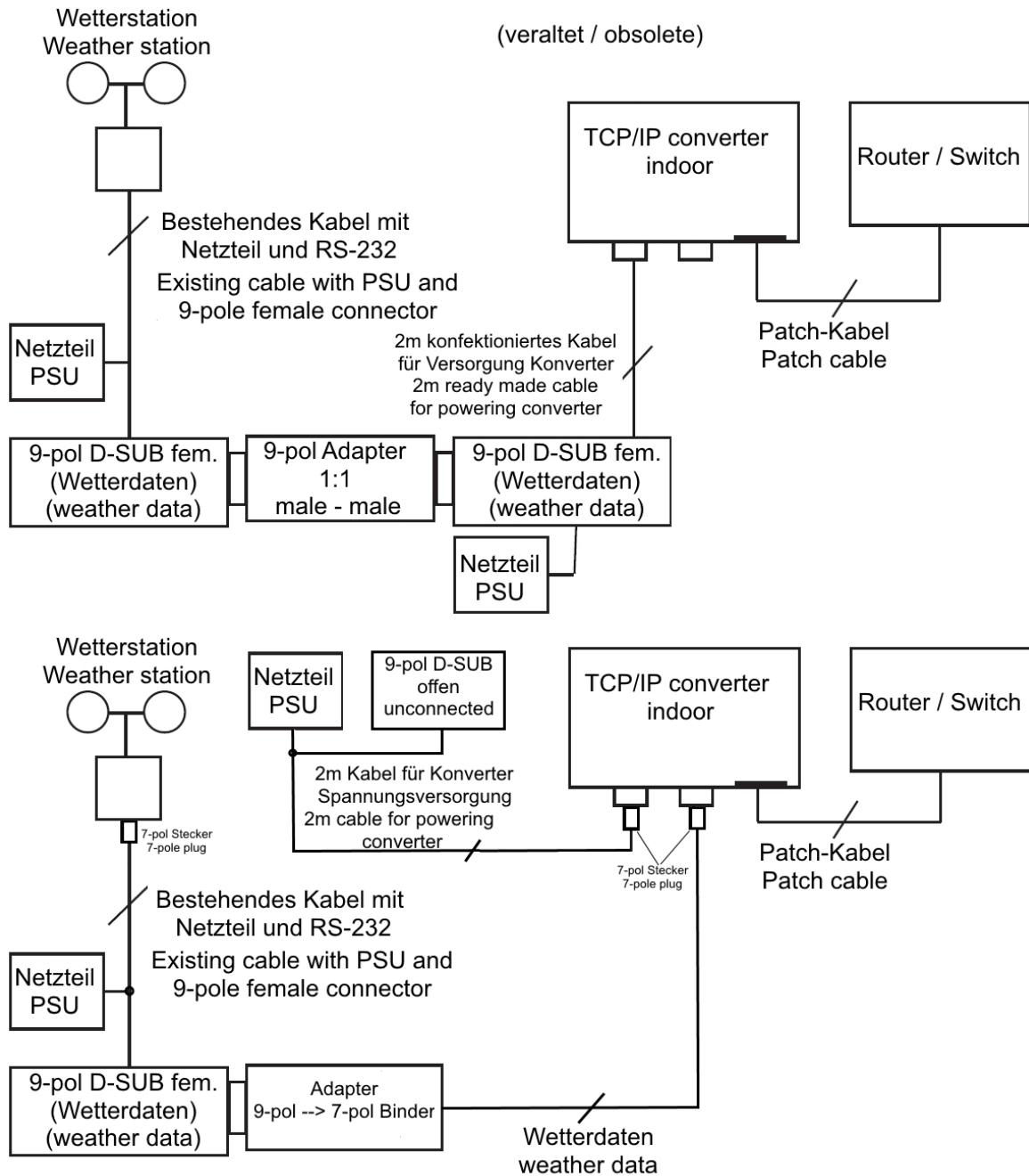
Below you see the recommended connection of the TCP/IP converter indoor to an existing weather station without the need to install a new cable to the weather station.

The weather station and the TCP/IP converter are powered with their own PSU unit.

The existing cable remains and the new cable (2m ready made cable) is used to power the TCP/IP converter indoor. (left receptacle)

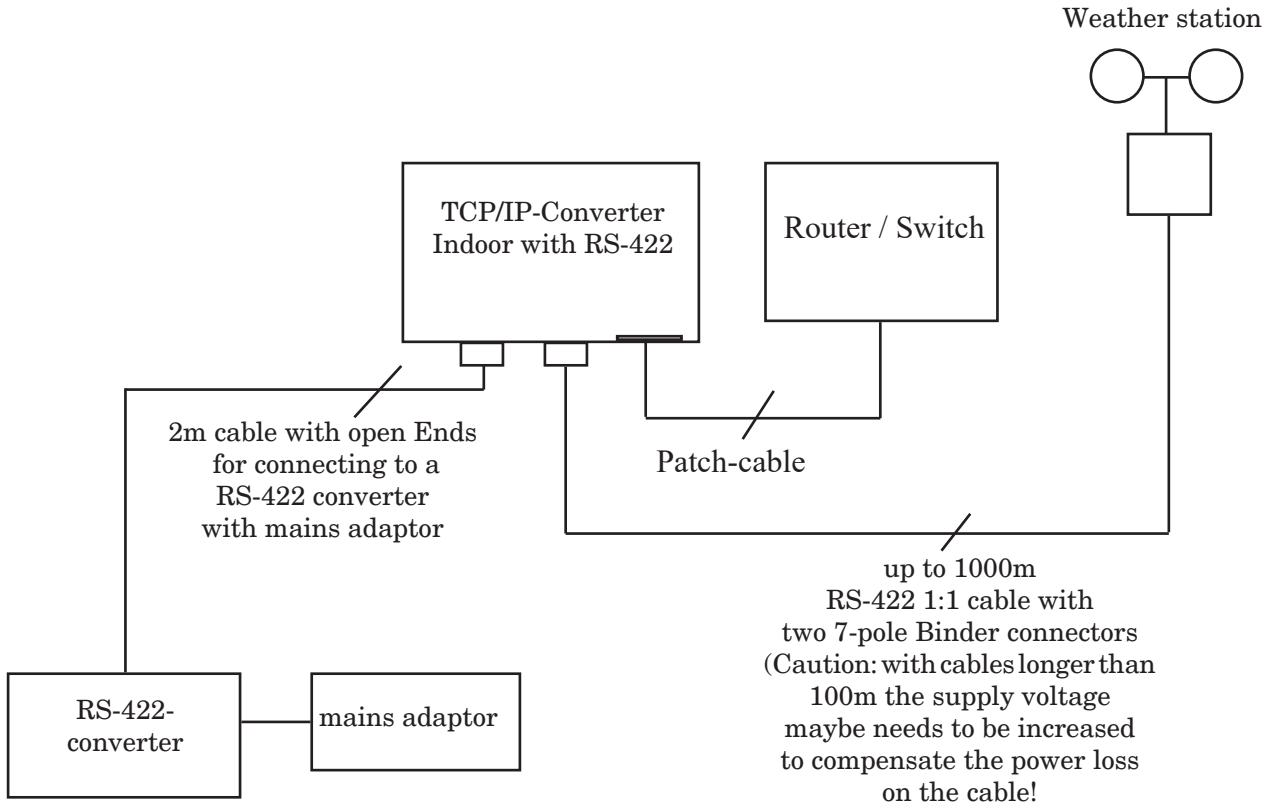
The serial line of the weather station is connected to the serial input of the TCP/IP converter indoor via an additional adaptor (9-pole D-SUB male to 7-pole Binder) (right receptacle)

The upper picture is obsolete, below the current connection schematic.

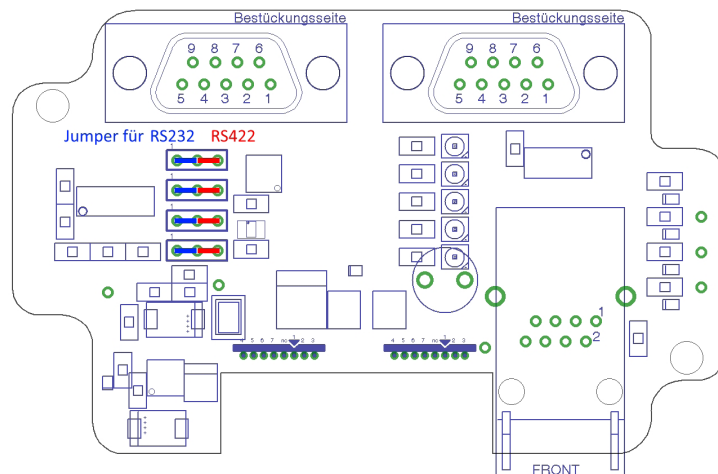


4.3 Connection with RS-422 port

When your TCP/IP converter is equipped with RS-422 port the connection is performed as shown below:



The internal jumpers have to be placed on the left side for RS232 and on the right side for RS422.



4.4 Connecting the TCP/IP converter to a single computer

For connecting the TCP/IP converter to a single computer you'll need a switch. The converter and the computer are connected via a network cable to the switch.

Now set the computer and the converter to 2 suitable IP addresses, e.g.:

192.168.240.100 for the TCP/IP converter and

192.168.240.110 for the computer.

Now you are able to get access to the data of a weather station connected to the converter via the converter's IP address.

I&OE / Specifications subject to change without prior notice !
06/23