Connection of a Modem to a Sunny Boy Control with RS485

Technote: Connection and Configuration of a Modem with RS485 to a Sunny Boy Control for remote monitoring of PV-Plants

Valid for: Sunny Boy Control, Sunny Boy Control Plus
This technote is to be used by developers and installers.
This technote is a supplement to the Technical description.

Author: Gerald Salisbury
Approved: Lothar Müller
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Please pay attention to all relevant regulations and restrictions in the Technical Description!

Description

When monitoring PV-plants with a Sunny Boy Control it can be necessary to couple several Sunny Boy Control or to transmit data over longer distances. The Sunny Boy Control can be equipped with an RS485 interface in these cases. This technote describes how to connect a suitable modem to a Sunny Boy Control with RS485.
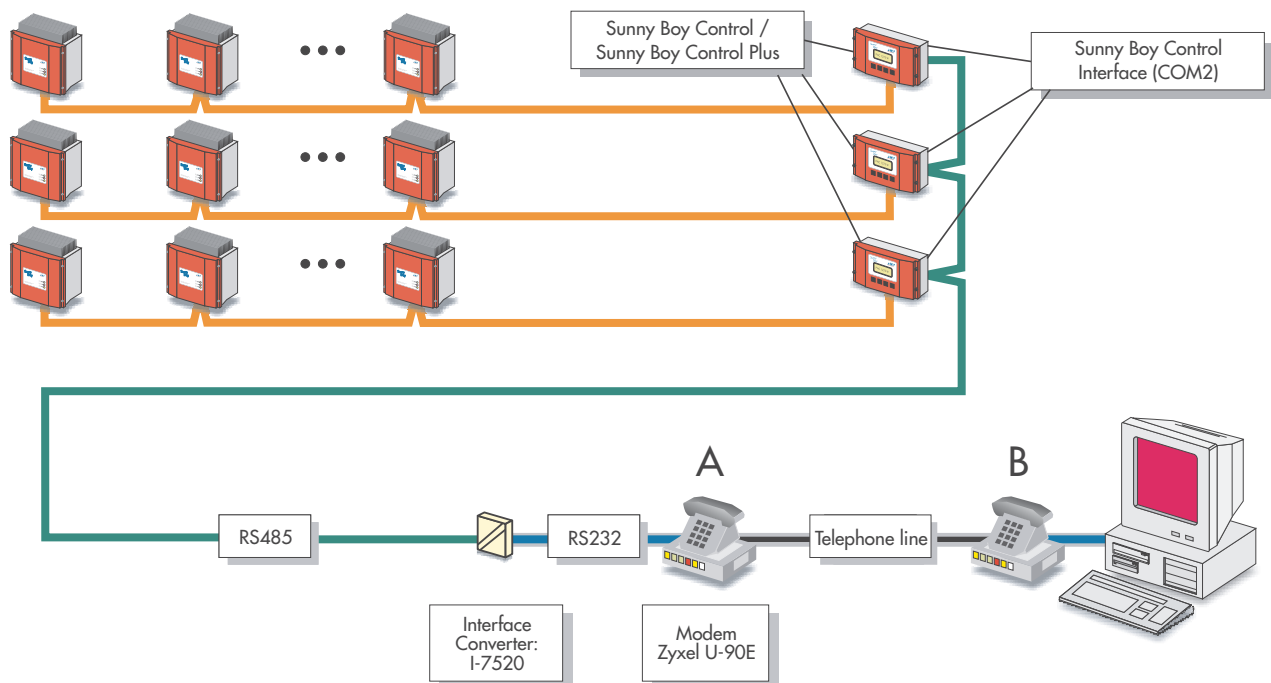

Figure 1: Schematic overview of the data transmission cabling of a PV-plant with several Sunny Boy Control and remote monitoring via modem

Requirements for the connection of a modem to the Sunny Boy Control with RS485

- The modem is only used for remote monitoring with a PC. The transmission of fax messages is not possible when the modem is connected to the Sunny Boy Control via RS485!

- Use a modem type „Zyxel U-90-E" (see www.zyxel.com).

- Use an interface converter type „I-7520" (see www.icpdas.com).

Connection of the modem to the interface converter

The cabling of the Sunny Boy Control, the interface converter and the modem is done as shown below:
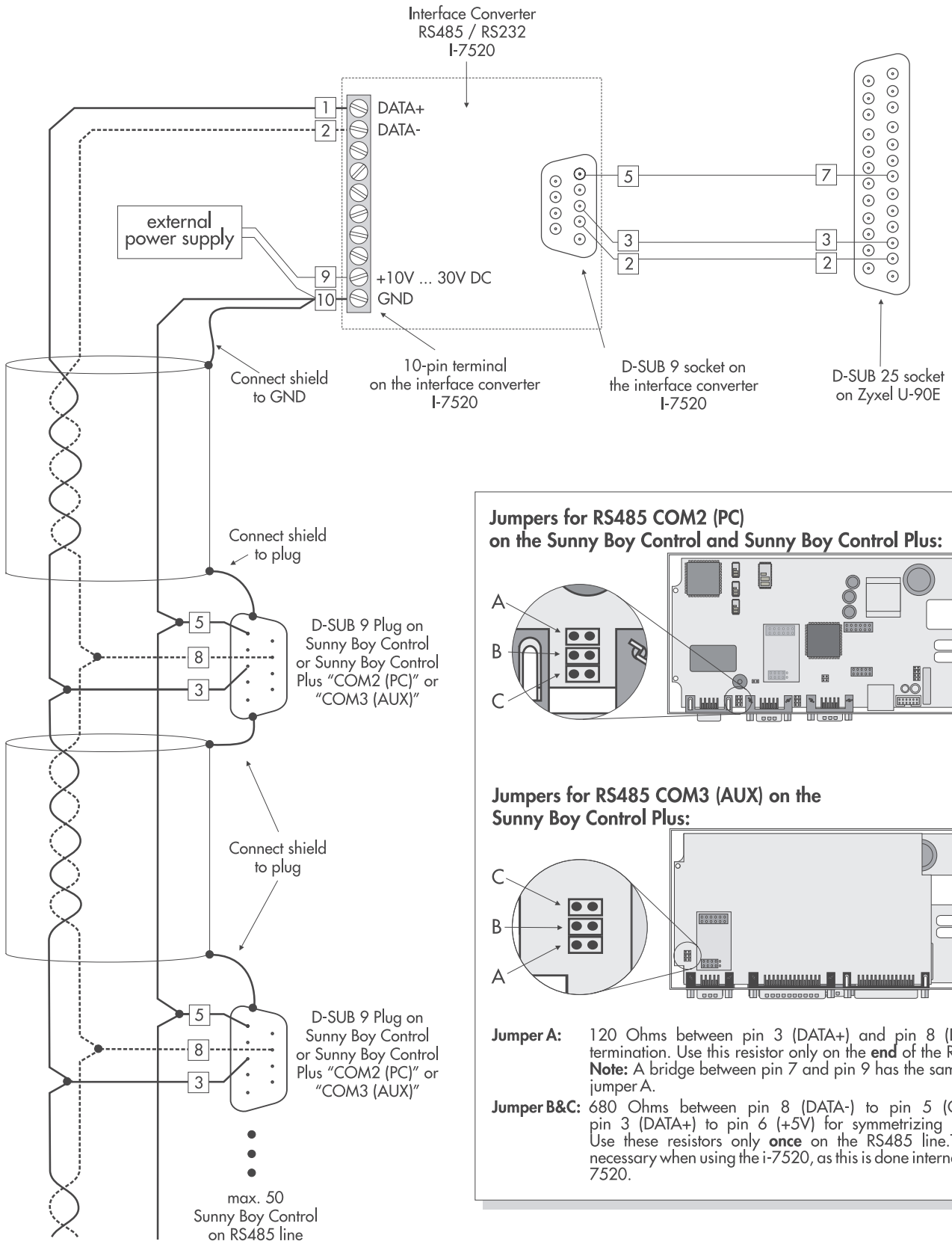

Figure 2: Cabling diagram between the Sunny Boy Control, the interface converter and the Zyxel U-90E modem

Configuration of the Zyxel modem for the operation with a Sunny Boy Control via RS485

The Zyxel modem must be configured for the remote monitoring of the PV-plant:

- Connect the modem (marked with "A" in figure 1) to a PC or laptop while using a 1-to-1 cable (this cable is delivered with your modem).

- Start a terminal program.

- Enter following AT commands:

AT&FL2M1	(loads factory default, speakers to medium volume until connection is established.)
ATS0=1S20=5S18=5	(Auto-answer after one ring, DTE speed to 19200 Baud, fixed speed to 19200 Baud)
AT&D0&H0&WZ	(ignore DTR signal, no flow control, save settings in profile "0", define profile "0" as standard profile)

- The modem settings are now saved and are automatically loaded every time the modem is turned on.

Settings on the Sunny Boy Control

- Rate for COM2 = 19200 Baud (default setting)

- Modem = deactivated (default setting)