7XV5700 RS232 – RS485 converter

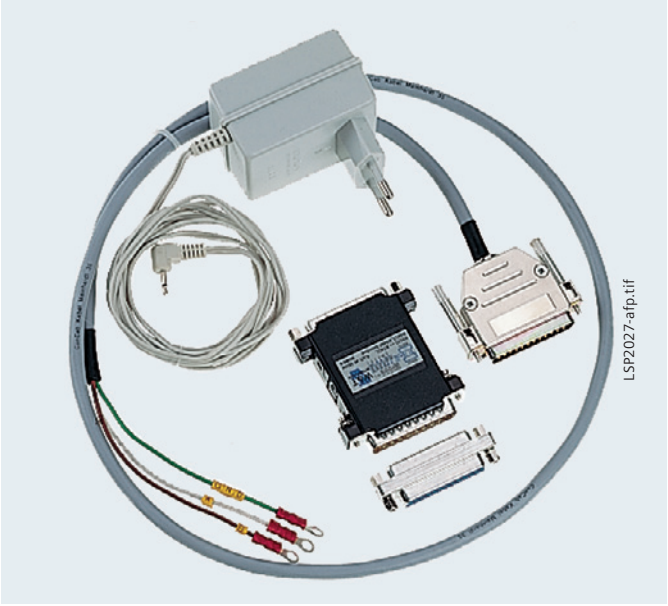

Fig. 13/73 RS232 – RS485 converter

Description

Up to 31 SIPROTEC 4 relays with an electrical, bus-capable RS485 interface to a PC for centralized control can be connected via the RS232↔RS485 converter.

The converter is housed in an expanded plug casing. The interfaces are connected to 25-pin female connectors. The auxiliary voltage is supplied via a plug-in power supply unit attached to the side. Auxiliary voltages of AC 110 or 230 V make operation with all common AC networks possible.

A twisted and shielded cable with two wires is required for the RS485 bus. The protection relays are connected to the bus in series. Data transmission at a speed of 19.2 kbaud with a bus length of up to approximately 1000 m is possible.

The converter, plug-in power supply unit and the connecting cable to the first relay are included in the scope of supply.

Function overview

- Minimum baud rate: 9600 baud
- Maximum baud rate: 115 kbaud
- No setting of baud rate necessary
- Compact plug casing
- Power supply via plug in PSU
- Maximum 31 relays at RS485 bus
- Complete set for connecting 1 relay to RS485 bus

Applications, functions

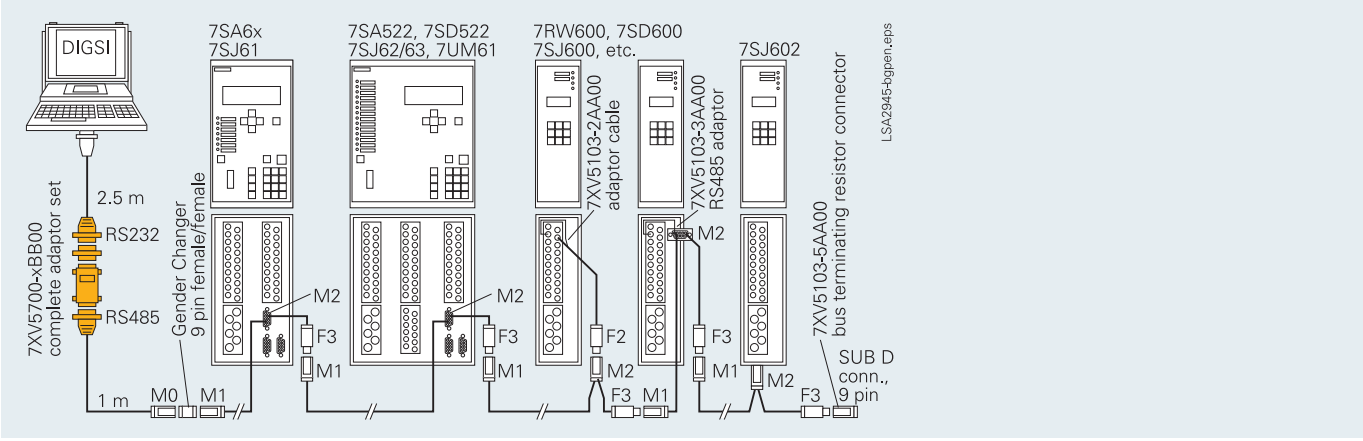

Fig. 13/74 Protection units connected to the RS485 bus
Note
The converter may not be used with a substationmodem due to non-existing isolation.
It is recommended to use the 7XV5650 and 7XV5651 converters in conjunction with the substation modem.

Applications

The RS232↔RS485 converter allows up to 31 SIPROTEC 4 protection relays with electrical busable RS485 interfaces to be connected to a PC notebook.

The converter is housed in an expanded plug casing. The interfaces are connected to 25 pin female connectors. The RS485 interface has a terminating resistor. The auxiliary voltage is supplied via a plug-in power supply unit attached to the side. Auxiliary voltages of AC 110 V or 230 V make operation with all common AC networks possible.

Functions

The converter works according to the master/slave principle. In idle state, the RS232 interface is inactive while the RS485 interface is switched to the receiving mode. During communication, the PC (master) sends data to the RS232 interface, which are transmitted (half duplex) to the protection unit (slave) by the converter at the RS485 interface. After data transmission, the RS485 interface is once again switched to the receiving mode. Vice versa, data supplied by the protection unit are sent back by the converter to the RS232 interface and to the PC.

No handshake signals are being processed during communication. This means that data sent by the PC are mirrored, which may cause problems in special applications.

Connections

The PC is connected to the converter by means of a DIGSI cable e.g. 7XV5100-2.

A twisted and shielded cable with two wires is required for the RS485 bus. The conductor cross section has to be adapted to the ring cable lugs and the SUB-D connectors. The individual wires protruding from the shield should be kept as short as possible. The shield is connected to the housing ground at both ends. The protection units are connected in series to the bus. The shield between the converter and the protection units, or between the protection units, is connected at both sides. Whenever substantial cable lengths or high baud rates are involved, a terminating resistor of 220 ohm should be applied between signal lines A and B at the last protection unit. Data transmission at a speed of 19.2 kbit/s, with a bus length of up to approx. 1000 m, is possible.

Technical data

Design	
Plug chassis	Plastics
Dimensions	63 × 94 × 16 mm (W × H × D)
Degree of protection	IP20
Power supply	
Power supply	AC 110 or 230 V
Via	Plug-in power supply unit
Electrical interfaces	
Type	RS232 to RS485 (non-isolated)
Assignment	See Fig. 13/74
CE conformity, standards	
This product is in conformity with the directive of the Council of the European Communities on the approximation of the laws of the Member States relating to the electromagnetic compatibility (EMC Council Directive 2004/108/EG previous 89/336/EEC).	Conformity is proved by tests performed by Siemens AG in accordance with the generic standards EN 50081-1 and EN 50082-2.

Selection and ordering data

Description	Order No.
7XV5700 RS232 – RS485 converter	**7XV5700-□□□00**
Rated auxiliary voltage	
Via plug-in auxiliary power supply unit (PSU) 230 V/50 Hz AC	0
Via plug-in auxiliary PSU 110 V/60 Hz AC	1
Connecting cable	
With RS485 connecting cable for 7SJ60, 7RW60, 7SD6, 7SV60, length 1 m	A
With RS485 connecting cable for SIMEAS Q and SIPROTEC 4, length 1 m	B
With RS485 connecting cable for SIMEAS T, length 1 m	C
Without RS232 connecting cable	A
With RS232 connecting cable 7XV5100-2 for PC/notebook, 9 pin	B
With RS232 adaptor, 25-pin connector (male) to 9-pin connector (female) for PC/notebook	C