



### Function overview

- Baud rates 9.6 – 115 kbaud
- Topologies:  
7XV5650: Optical star  
7XV5651: Optical line, RS485 bus
- Protocol transparency
- Light idle state: Light ON/light OFF selectable
- Distance: 1.5 km with 62.5/125  $\mu$ m FO cable
- 120  $\Omega$  terminator for RS485 bus, activated/deactivated by DIP switch
- Wide-range power supply with self-supervision function and fault output relay

Fig. 13/52 RS485 – FO converter

### Description

The RS485 – FO converter allows up to 31 devices to be connected with a bus-capable electrical RS485 interface. It provides an optical link-up to a central unit or a star coupler. The converter has been designed for use in substations for interference-free transmission of serial data with rates between 9.6 and 115.2 kbaud by multi-mode FO cable.

The 7XV5651 converter is designed to act as a T-coupler, data can be distributed in a line structure system, forming a basis for building up cost-effective optical bus systems.

The version 7XV5650 is designed for star topology via fiber-optic connection.

## Application

### Application

The converters can be used in an optical line structure or in an optical star structure. Application in optical line structure allows relays to be connected interference-free via fiber-optic cables; for indoor installation, a cost-effective RS485 bus can be used.

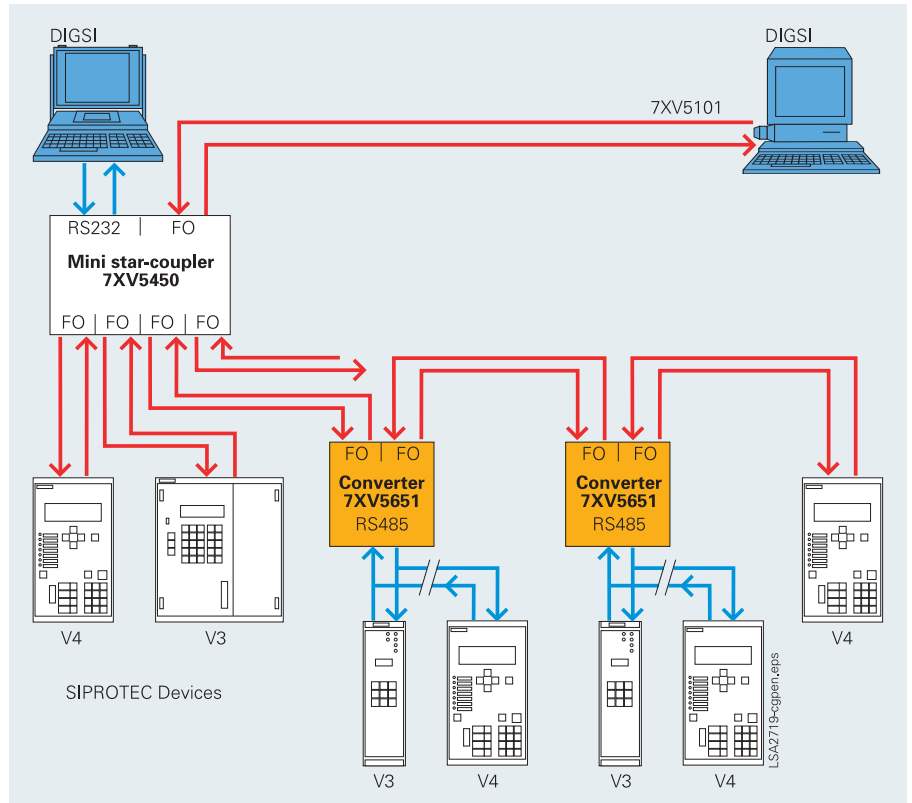


Fig. 13/53 Optical line structure with connected RS485 interfaces

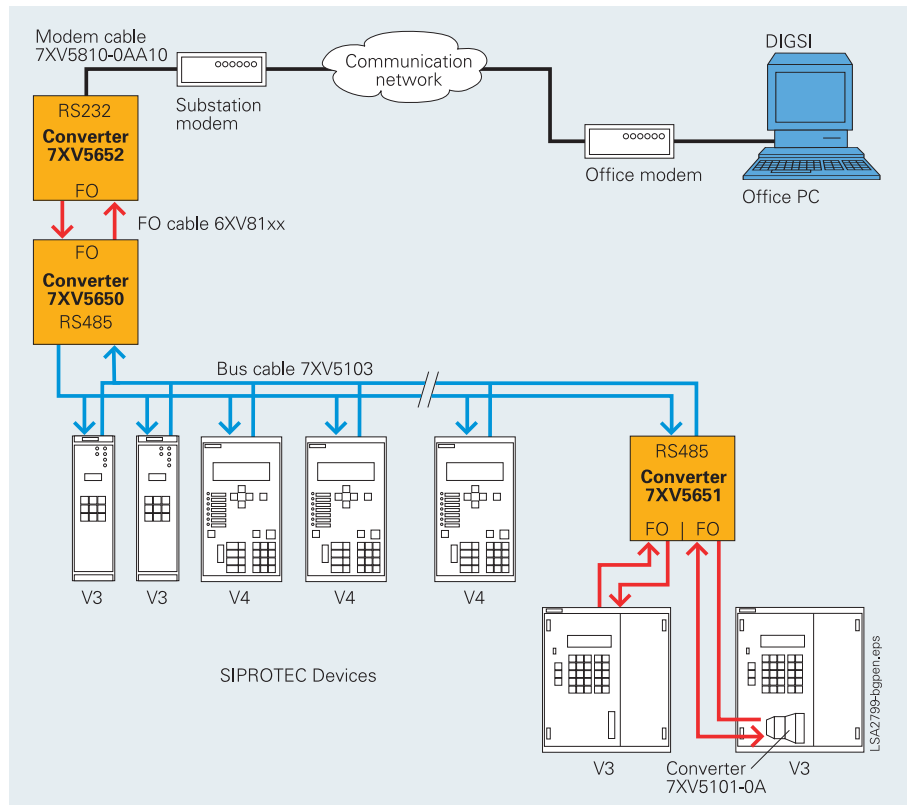


Fig. 13/54 Connection of optical interfaces to an RS485 bus

Several units equipped with FO interface and DIGSI or IEC 60870-5-103 protocol can be connected to an existing RS485 bus structure.

Within one system, the data format and the baud rate have to be set to the same values.

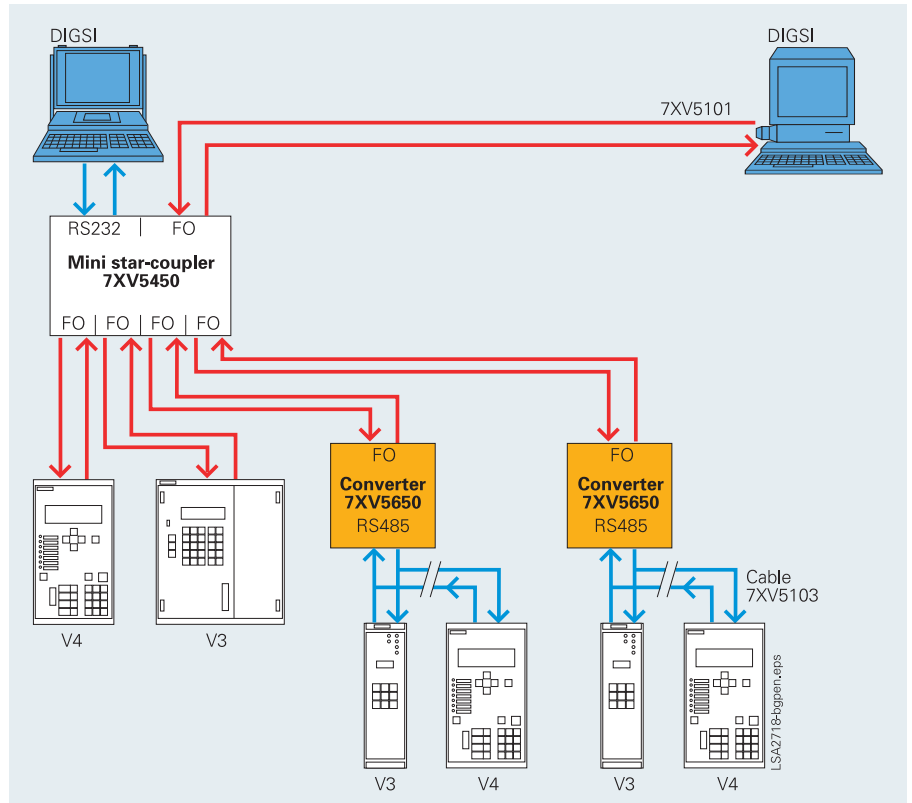


Fig. 13/55 Optical star structure with connected RS485 interfaces

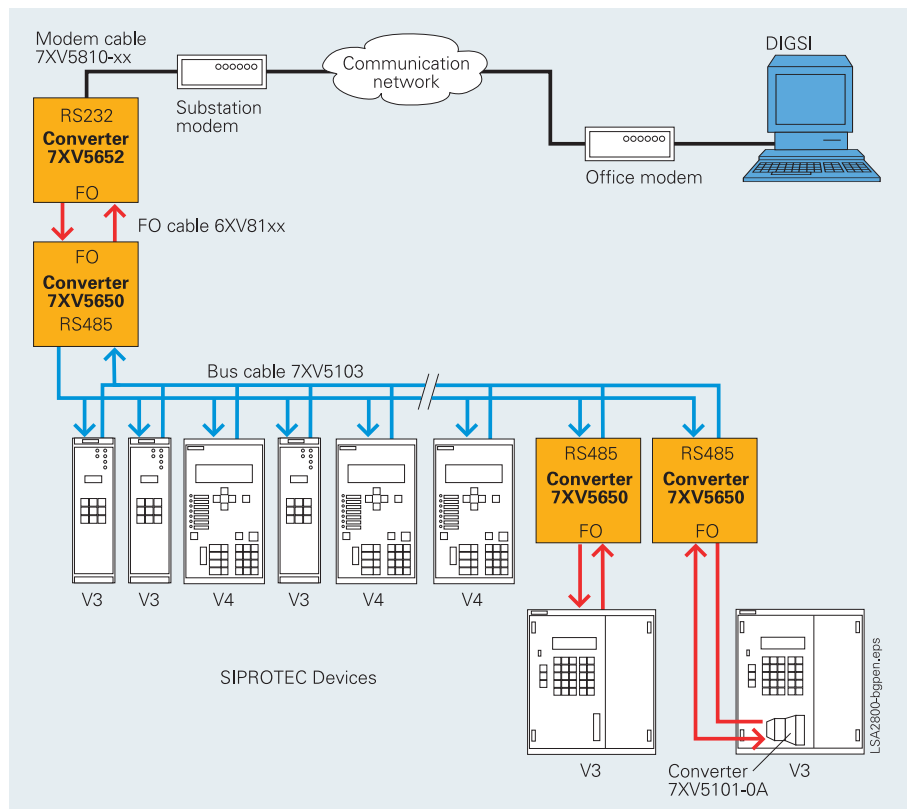


Fig. 13/56 Connection of optical interfaces to an RS485 bus

# Accessories / 7XV5650/51

## Construction, technical data, selection and ordering data

### Construction

The converter is provided with a snap-on mounting housing for a 35 mm EN 50022 rail. Auxiliary power supplies can be connected via screw-type terminals.

The fiber-optic cables are connected by ST connectors. The unit is free of silicone and halogen as well as flame-retardant.

### Technical data

<i>Rated auxiliary voltage</i>	
DC 24 to 250 V and AC 60 to 230 V	± 20 % without switchover
<i>Current consumption</i>	
Approx. 0.2 to 0.3 A	
<i>LEDs</i>	
2 / 3 LEDs Green Yellow Yellow	Operating voltage o.k. Receiving data on FO channel 1 Sending data on FO channel 2 (7XV5651 only)
<i>Connectors</i>	
Power supply	2-pole Phoenix screw-type terminal
FO	820 nm ST connector
RS485	9-pin SUB-D socket 2-pole Phoenix screw-type terminal
Alarm contact	2-pole Phoenix screw-type terminal
<i>Light idle state</i>	
Light ON/OFF selectable	
<i>Housing</i>	
Plastic housing, EG90, charcoal grey; 90 × 75 × 105 mm (W × H × D) for snap-on mounting on 35 mm EN 50022 rail	

### Selection and ordering data

Description	Order No.
<b>7XV565 RS485 – FO converter</b>	<b>7XV565</b> <input type="checkbox"/> - 0BA00
Converter with 1 RS485 interface and 2 FO cables for transmission rates from 9.6 kbaud to 115 kbaud With plastic housing for snap-on mounting on 35 mm rail. Rated auxiliary voltage DC 24 – 250 V and AC 110 – 230 V with alarm contact. Connection of units with RS485 interface by 9-pin SUB-D connector or screw-type terminals. Connection of PC or modem to a star coupler via FO cable for 62.5/125 µm or 50/125 µm and 850 nm wavelength. Fiber-optic connectors: FO 820 nm with ST connector	
1 channel	0
2 channels	1