

## 7XV5650/5651 RS485 – FO Converter

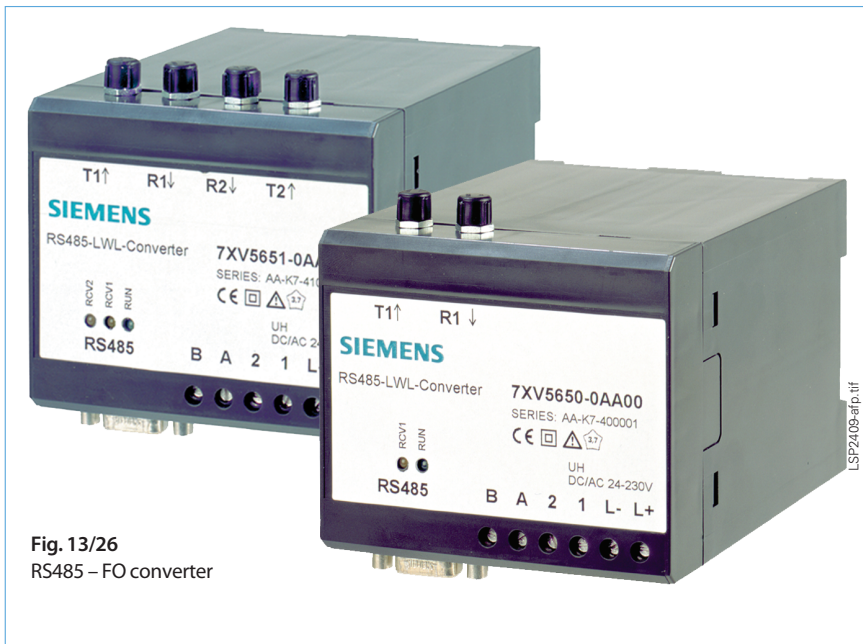


Fig. 13/26  
RS485 – FO converter

### 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  $\mu\text{m}$  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

### 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**

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.

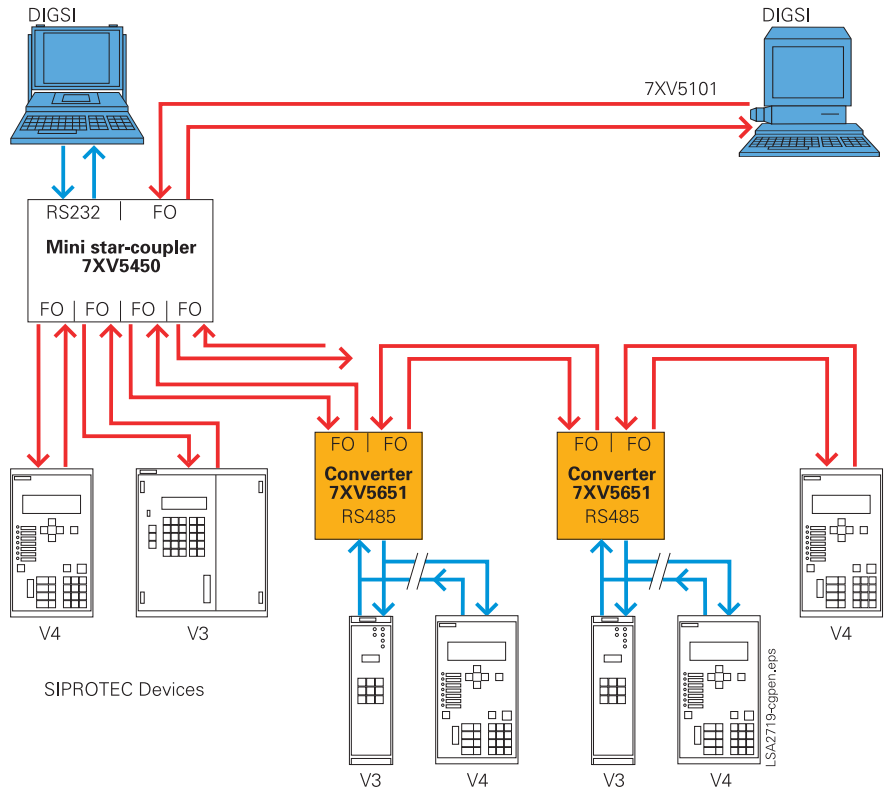


Fig. 13/27 Optical line structure with connected RS485 interfaces

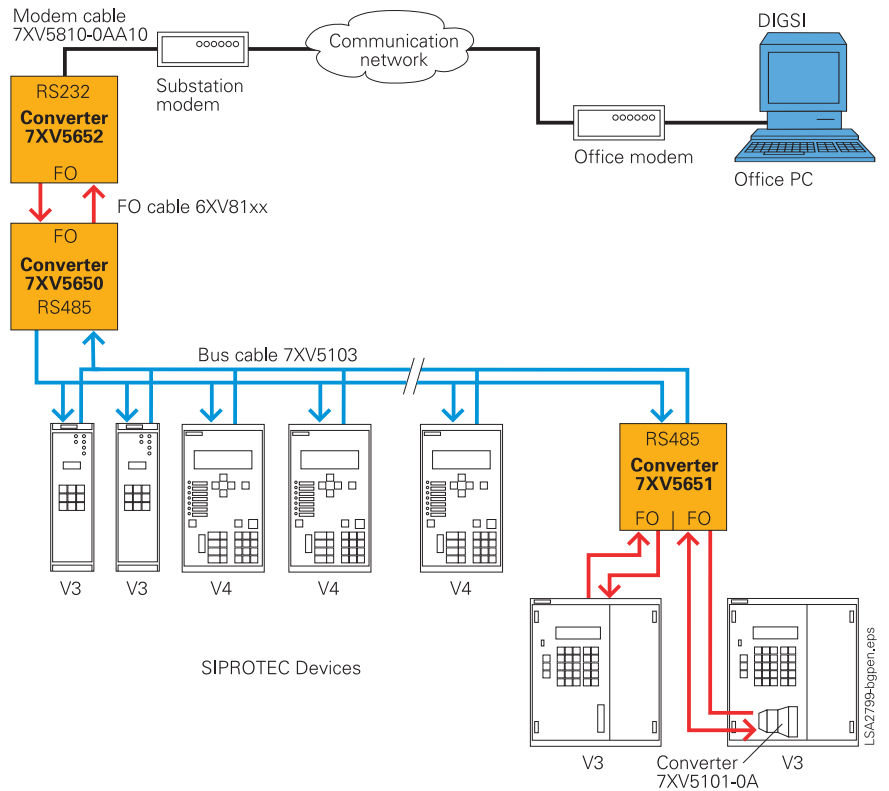
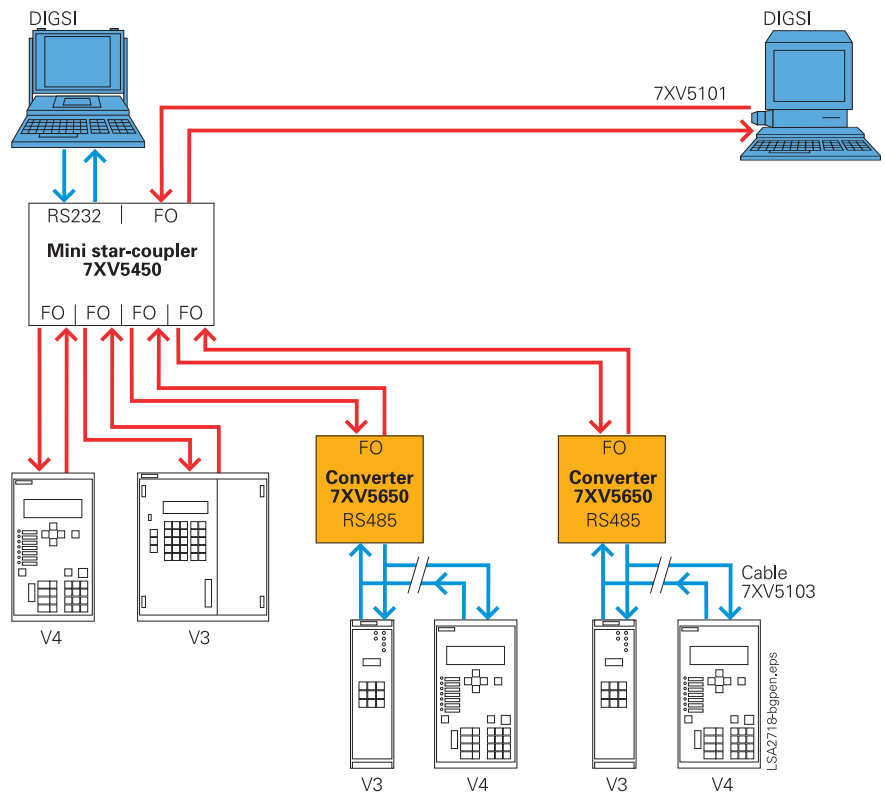


Fig. 13/28 Connection of optical interfaces to an RS485 bus

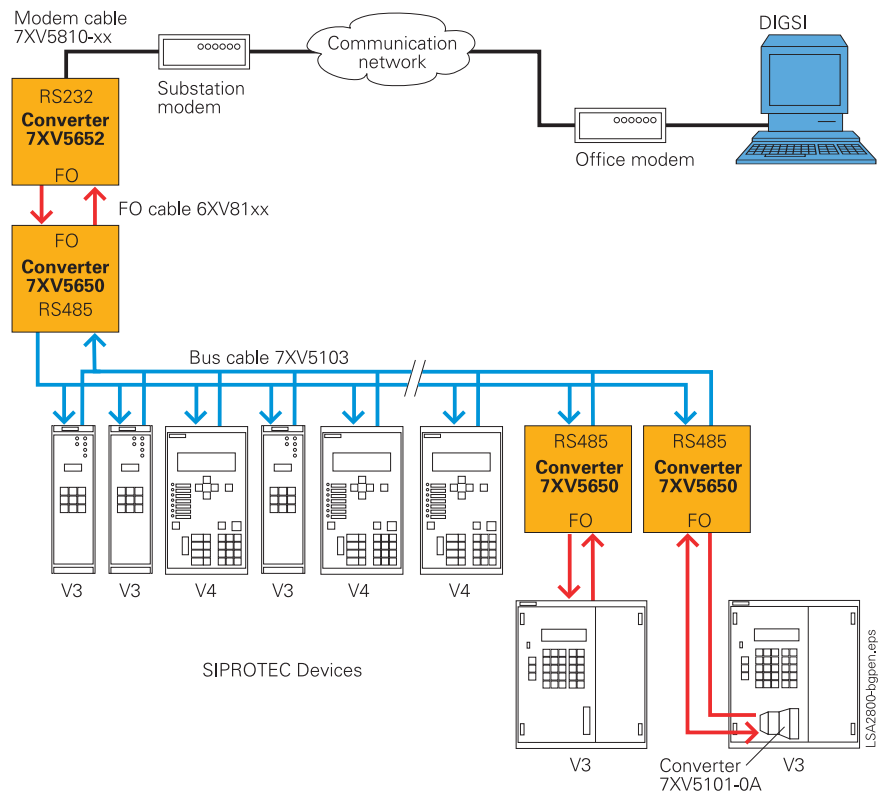
**Application**

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. 13/29** Optical star structure with connected RS485 interfaces



**Fig. 13/30** Connection of optical interfaces to an RS485 bus

**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**

<b>Rated auxiliary voltage</b>	
24 to 250 V DC and 60 to 230 V AC	± 20 % without switchover
<b>Current consumption</b>	
Approx. 0.2 to 0.3 A	
<b>LEDs</b>	
2/3 LEDs	
Green	Operating voltage o.k.
Yellow	Receiving data on FO channel 1
Yellow	Receiving data on FO channel 2 (7XV5651 only)
<b>Connectors</b>	
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
<b>Light idle state</b>	
Light ON/OFF selectable	
<b>Housing</b>	
Plastic housing, EG90, charcoal grey; 90 x 75 x 105 mm (W x H x D) for snap-on mounting onto 35 mm EN 50022 rail	

**Selection and ordering data**

Description	Order No.
<b>7XV565 RS485 – FO converter</b>	<b>7XV565□-0BA00</b>
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 24 - 250 V DC and 110 - 230 V AC 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	↑ 0 1
1 channel	0
2 channels	1