

Two-channel serial optical Repeater for monomode **duplex** fiber cable

7XV5461-0Bx00

Two multiplexed optical 820 nm multimode fiber input ports. One optical 1300 nm / 1550 nm output port for distances up to 24 km / 60 km / 100 km / 170 km for monomode duplex fiber.
Permissible baud rate at optical 820 nm input ports 300 bit/s – 4.096 Mbit/s for each port.

The optical repeater exchange serial optical signals over long distances via mono-mode FO cables. It converts serial optical 820 nm signals at Port 1 and Port 2 in the range 300 Bit/s – 4.096 MBit/s to 1300 / 1550 nm for monomode fiber cables. Both synchronous and asynchronous signals can be connected. Two independent, serial 820 nm inputs with ST connectors are available, which are multiplexed to Port 3. Two devices with an optical 820 nm interface, for example the 7SD5 / 7SD610 line differential protection relay or the RS232/820 nm 7XV5652 converter, can be connected to Ports 1 and 2 via multi-mode FO cables for distances of up to 1.5 km. Signal transmission at Port 3 is achieved via the LC-Duplex connector at wavelengths of 1300 nm / 1550 nm for connection of mono-mode FO cable. For Port 3 there are three options for max. 24km / 60 km (1300 nm) and 100 km / 170 km (1550 nm) optical fiber lengths. The device can be connected to all battery voltages and AC supply sources. Loops can be activated for Ports 1 / 2 for commissioning purposes, so that the input signals can be mirrored at the port.

Features:

- 2 independent multiplexed 820 nm ports with ST connectors for max. 1.5 km via 50/125 μm and 62.5/125 μm multi-mode FO cable.
- Data rate of serial ports 1 / 2 from 300 Bit/s – 4.096 Mbit/s.
Automatic baud rate adjustment to synchronous and asynchronous serial signals
No settings necessary.
- Powerful 1300 nm / 1550 nm port with LC-Duplex connector for distances up to 25 km / 60 km / 100 km / 170 km via 9/125 μm mono-mode FO cable.
- 24 V to 250V DC and 115/230 V AC wide-range power supply with alarm relay.
- Data exchange display by LED
- Integrated commissioning support



Fig.: Optical repeater with wide-range power supply

Technical data:

Connections

- Ports 1 / 2: ST connector for 820 nm for 50/125 μm and 62.5/125 μm multi-mode FO cable.
- Port 3: LC-Duplex connector for 1300 nm/1550 nm for 9/125 μm mono-mode FO cable.
- 2-pole screw-type terminals for auxiliary voltage supply.
- 3-pole make/break contact for alarm relay.

Housing

- 188x56x120 mm aluminum housing for mounting on 35 mm DIN rail to EN50032
- Weight 0.8 kg. Degree of protection to EN 60529: IP 41

Power supply

- Wide range 24 V to 250 V DC without switch over. or 115 / 230 V AC.

Displays

- 4 LEDs. Green – power supply. Red – alarm relays. 2 yellow – data exchange

Application

Two protection relays (for example 7SD52 / 7SD610 differential protection or 7SA52 / 7SA6 distance protection) exchange information via Port 1. Interference-free data exchange is made possible by optical mono-mode FO cable up to a distance of 100 km. Protection remote control with DIGSI is connected to Port 2 of the repeater via 7XV5450 mini star coupler. This port provides the serial connection to the other substation with a PC where DIGSI is installed. The protection relays on the remote substation can be scanned remotely via Port 2. The baud rate is optimally set to 57.6 kbit/s so that no divergence from local operation results. In commissioning and operation, the data of the devices in the other substation can be changed and read out. Alternatively, it is possible to connect power system control or additional protection data transmission to Port 2. This makes optimum use of the long-distance optical fiber for two independent serial connections for transmitting data between 300 bit/s and 4.096 Mbit/s.

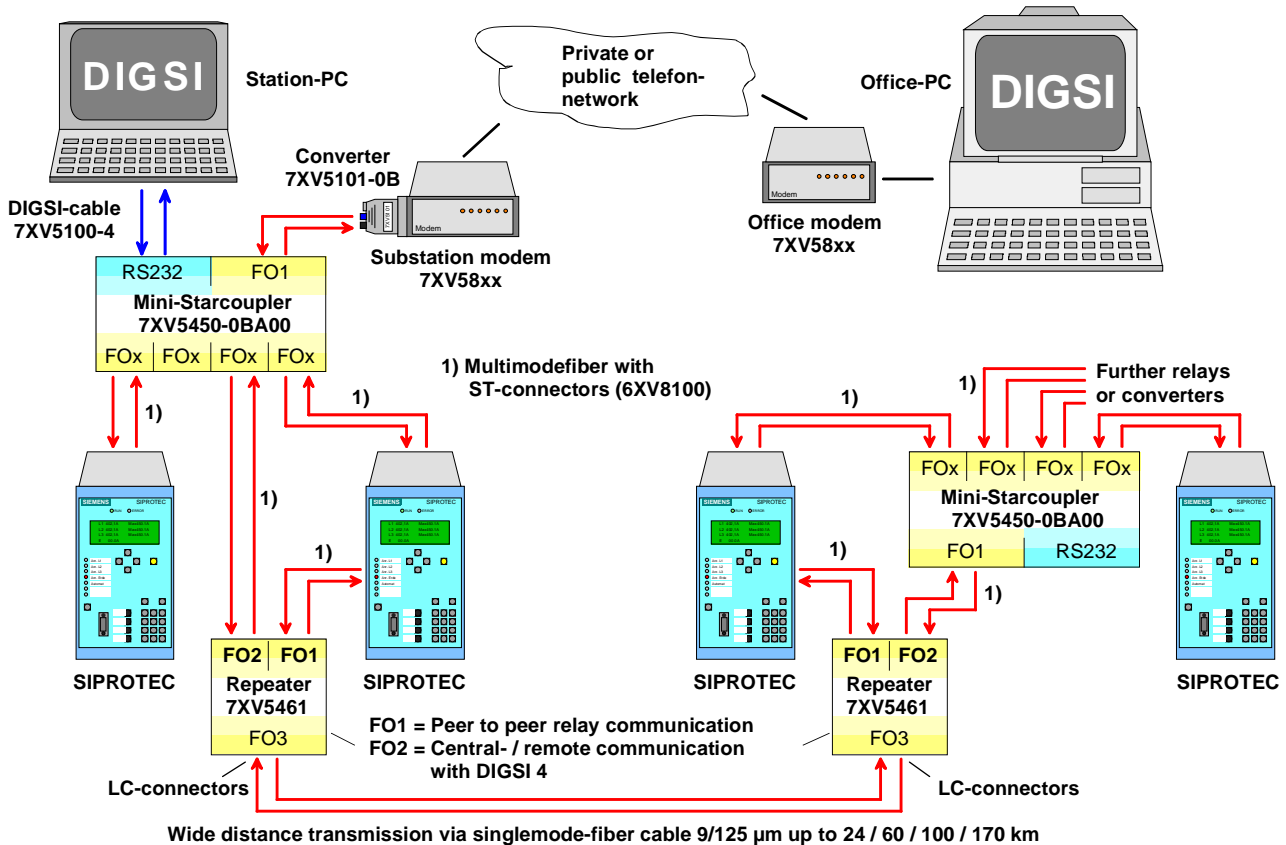


Fig. 1: Transfer of protection data and remote control of a substation via an optical long-distance connection

Selection and Ordering Data

Product Name	Order No.:
Two-channel serial, optical repeater	7 X V 5 4 6 1 - 0 B 0 0
Connection of two serial, optical inputs with ST connector for 62.5/125 μm multi-mode FO cable up to 1.5 km, from 300 bit/s – 4.096 Mbit/s	
24 V-250 V DC, 115/230 V AC wide-range power supply	
Fault relay and LED for operational and fault display	
Optical 1300 nm output with LC-Duplex connector for 9/125 μm mono-mode FO cable for distances up to 24 km (Optical Budget 13 dB)	G
Optical 1300 nm output with LC-Duplex connector for 9/125 μm mono-mode FO cable for distances up to 60 km (Optical Budget 29 dB)	H
Optical 1550 nm output with LC-Duplex connector for 9/125 μm mono-mode FO cable for distances up to 100 km (Optical Budget 29 dB)	J
Optical 1550 nm output with LC-Duplex connector for 9/125 μm mono-mode FO cable for distances up to 170 km (Optical Budget 43 dB)	M

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