SIEMENS

Catalogue sheet 7XV5461-0Bx00

Two-channel serial optical repeater for the transmission over one monomode fiber — 7XV5461-0Bx00

Two independent optical 820 nm input ports up to 1,5 km via multimode fiber. Permissible baud rate at the 820 nm inputs from 300 Bit/s – 4,096 MBit/s. Synchronous and asynchronous serial signals allowed. One multiplexed optical 1330 nm/1550 nm port for distances up to 40 km over monomode fiber with integrated wavelength multiplexer. Only one monomode fiber required.

The optical repeater exchange serial optical signals over long distances via one monomode fiber. 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 one monomode fiber. Both synchronous and asynchronous signals can be connected at Port 1/2. 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 multimode FO cables for distances of up to 1.5 km. Signal transmission at Port 3 is achieved via the single LC connector at wavelengths of 1300 nm / 1550 nm for connection of mono-mode FO cable up to 40 km. The device can be connected to DC 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 each port to support commissioning of the fiber optical links.

Features:

- Two independent multiplexed 820 nm Ports 1/2 with ST connectors for max. 1.5 km via 50/125 μm and 62.5/125 μm multimode FO cable.
- Data rate of serial Ports 1 / 2 from 300 Bit/s – 4.096 Mbit/s. Automatic baud rate adjustments to synchronous and asynchronous serial signals No settings necessary.
- Powerful 1300 nm / 1550 nm port with LC-single connector for distances up to 40 km via one 9/125 μm monomode fiber.
- 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.1: Optical repeater with integrated 1300nm/1550 nm wave length multiplexer for one monomode fiber

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-single connector for 1300 nm/1550 nm for one 9/125 μm monomode fiber
2-pole screw-type terminals for auxiliary voltage supply.
3-pole make/break contact for the alarm relay.

Housing

Interference free 188x56x120 mm metal 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 or 115 / 230 V AC.

Displays

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

Application

Until now for the bidirectional transmission of protection signals two fibers are required. With the repeater with integrated wavelength multiplexer one fiber is necessary. Two protection relays (for example 7SD52 / 7SD610 differential protection or 7SA52 / 7SA6 distance protection) exchange information via Port 1 (Po1). Interference-free data exchange is made possible by one optical monomode fiber up to a distance of 40 km. Protection remote interrogation with DIGSI is connected to Port 2 (Po2) of the repeater via 7XV5450 ministar-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 operated 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 substation control devices, RTU or additional protection data connection to Port 2. This makes optimum use of the long-distance optical fiber for two independent serial connections for transmitting serial data between 300 Bit/s and 4.096 Mbit/s.

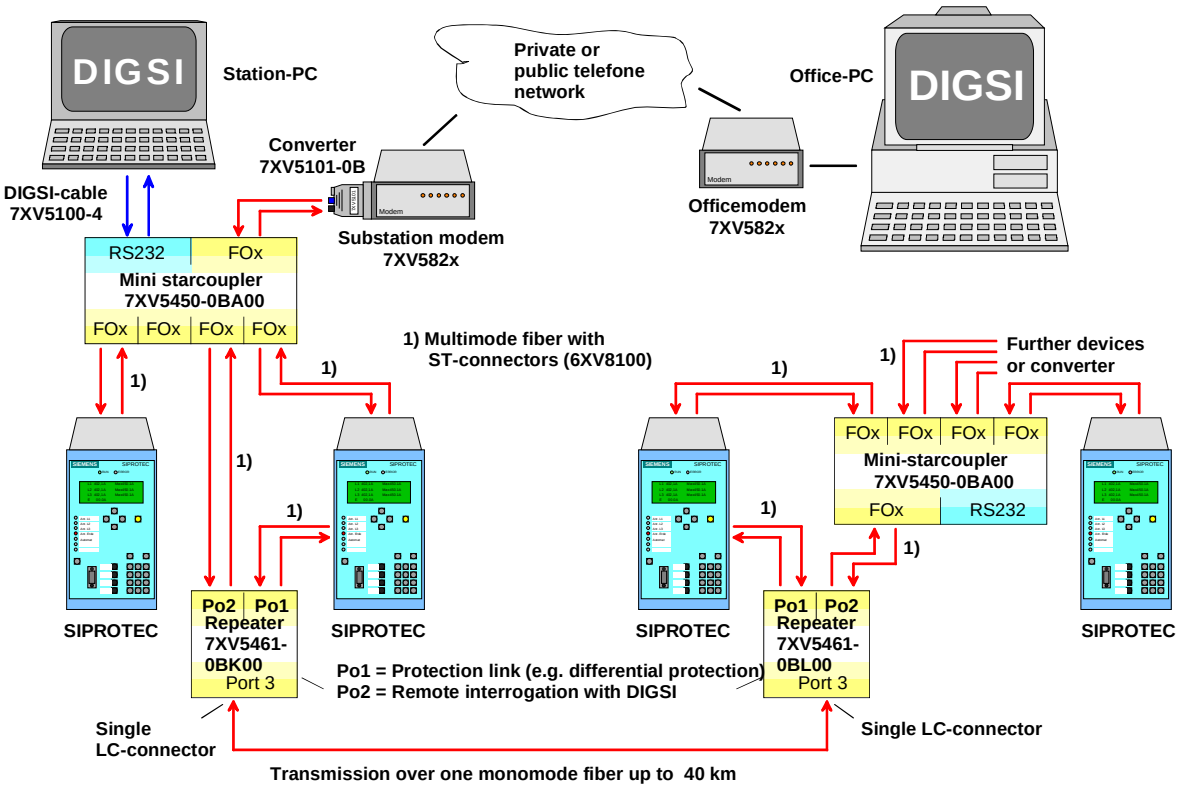

Fig. 1: Transfer of protection data signals and remote interrogation via one monomode fiber

Note: The devices 7XV5461-0BK00 and 7XV5461-0BL00 must be used in pairs

Selection and Ordering Data

Product Name	Order No.: 7XV54 6 1 - 0 B		0 0
Two-channel serial, optical repeater **With integrated wave length multiplexer** 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 Alarm relay and LED for operational and fault display			
Optical 1550 nm output with LC-single connector for 9/125 µm mono-mode FO cable for distances up to 40 km (permissible attenuation 25 dB)		K	
Optical 1300 nm output with LC-single connector for 9/125 µm mono-mode FO cable for distances up to 40 km (permissible attenuation 25 dB)		L	

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