

Optical Repeater 820nm/1300nm up to 14 km 820nm Multi-Mode-Fiber to 1300nm Mono-Mode-Fiber

7XV5451

The optical repeater 820 nm/1300 nm converts serial information received with a wavelength of 820 nm on multimode fibre to a wavelength of 1300 nm, and vice versa. This allows to connect devices to monomode FO cables that are commonly used for long-distance data communications and thus to transmit serial information with rates between 9.6 kbauds and 1.5 Mbauds interference-free in full duplex mode over distances of up to 14 km. When used in combination with the 7SD51 line differential relay, it allows cost effective bidirectional transmission of serial differential protection data via monomode fibre over long distances. The protection relay is directly coupled to the repeater via the 820 nm optical interface.

Features:

- Minimum baud rate 9600 bauds
Maximum baud rate 1.5 Mbauds
- No setting of baud rate necessary
- Full duplex operation
- Polarity selectable: Light ON / Light OFF in idle state for 820 nm interface
- Distance spanned on 820 nm side:
1.5 km with multimode fiber 62.5/125 μm
- Distance spanned on 1300 nm side:
14 km with monomode fiber 9/125 μm
attenuation loss 0.5 dB/km
- Wide range power supply with self-monitoring function and alarm relay



Supply voltage:	DC 24 V to 250 V	$\pm 20\%$ and
	AC 60 V to 230 V	$\pm 20\%$ without switchover
Current consumption:	approx. 0.1 to 0.2 A	
LEDs:	2 LEDs	
	- green: Operating voltage o.k.	
	- yellow: Receiving data on 1300 nm side	
Connectors:	Power supply:	2-pole Phoenix screw-type terminal
	820 nm line:	FSMA screw-type connectors
	1300 nm line:	BFOC ST-connectors for monomode fibre
	Fault signal output:	2-pole Phoenix screw-type terminal
Controls:	1 DIP switch for setting of polarity etc.	
Housing:	Plastic housing, EG90, charcoal grey; 90 x 75 105 mm (W x H x D) for snap mount on 35 mm DIN EN 50022 rail	

Applications

The optical amplifier / converter can be used for the connection of two line differential relays 7SD511/512 if monomode fibre cables are installed between the relays (see fig. 1). The link takes place directly to the optical interfaces of the relays with FSMA-plugs and multimode fibre cables to the converter. The maximum distance spanned with monomode fibre is 14 km, where ST-plugs are used for the connection with the fibre cables.

In combination with the binary signal transducer 7XV5653 the maximum transmission distance can be extended from 3 km with multimode fibre (direct link of two transducers) to 14 km with monomode fibre. The 820 nm to 1300 nm converter for this application is also necessary if monomode fibre cables are installed.

Attention ! In the transmission of other serial protocols like IEC 60870-5-103, IEC61850-5-101, DIGSI, Modbus, DNP3 etc. problems appeared in a few cases. Of the use in such applications we dissuade therefore urgently.

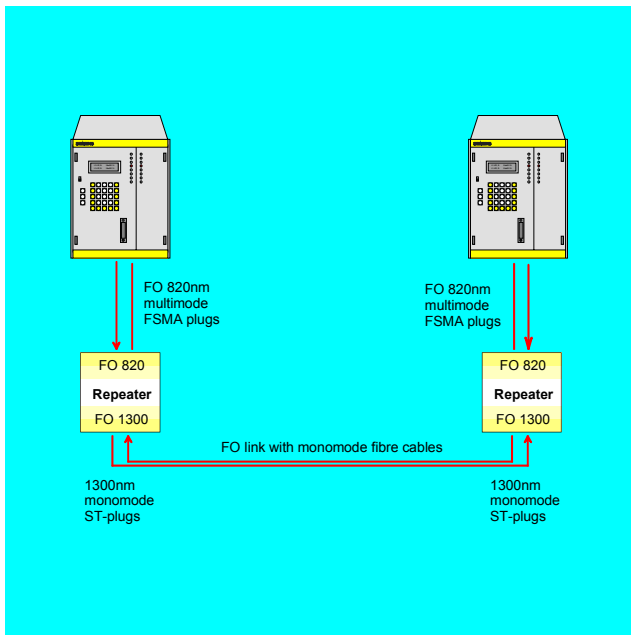


Fig.1: Connection of two line differential relays

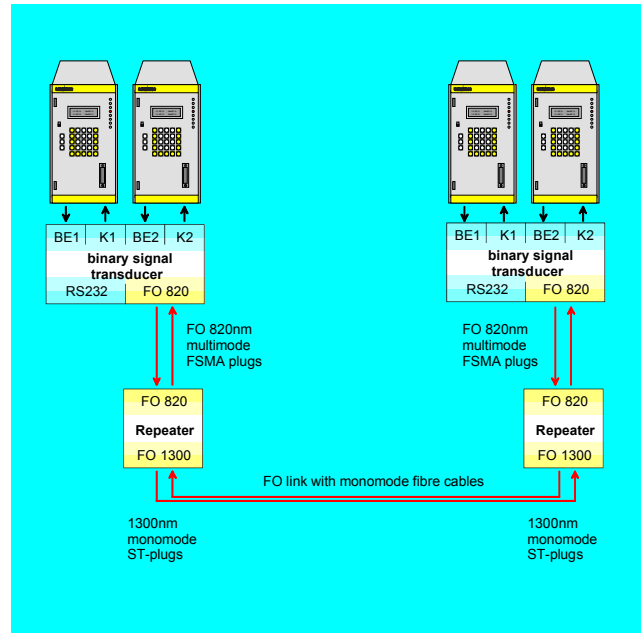


Bild 2: Binary signal transducer with monomode fibre connection

Selection and Ordering Data

Product Name	Order No.:
Optical Repeater 820nm/1300nm	7 X V 5 4 5 1 - 0 A A 0 0
Optical repeater with plastic housing for snap mount on 35 mm rail	
Auxiliary voltage DC 24-250 V DC and AC 110-220 V AC with alarm contact	
Connection of remote side by 1300 nm FOC for monomode optical fibre with BFOC ST-connector, max. distance 14 km	
Connection of binary signal transducer, protection device by 820 nm FOC for 62.5/125 µm or 50/125 µm optical fibre with FSMA connectors; max. distance 1.5 km	
Cascadable	
Designed also for use in combination with the 7SD51 line differential relay	

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