



Fig. 13/59 Binary transducer

### Description

The transducer registers binary information from contacts via two binary inputs and forwards it interference-free to the second transducer via fiber-optic cable. The indications/signals received by this second transducer are put out via its contacts. The two contacts can be used as trip contacts. The transducer is equipped with independent and bidirectional binary inputs (2) and contact outputs (2).

The transducer has been designed for application in substations. Highly reliable, telegram-backed serial data transmission is used between the transducers. Transmission errors and failure of the data link are indicated via an alarm contact, i.e. a permanent supervision of power supply and the datalink is integrated in the transducer.

### Function overview

- 2 isolated binary inputs (DC 24 to 250 V)
- 2 isolated trip contacts
- Fast remote trip via a serial point-to-point link of up to 115 kbaud/12 ms.
- Telegram-backed interference-free transmission via FO cable
- Permanent data link supervision and indication
- Distance of approx. 3 km via multi-mode FO cable 62.5/125  $\mu$ m
- Transmission of up to 170 km via mono-mode FO cable with 7XV5461 repeater
- Transmission via communication networks and leased lines and pilot wires with 7XV5662-0AC01 communication converters
- Wide-range power supply with self-supervision function and alarm relay

## Application, construction

### Application

The bidirectional transducer registers binary information at two binary inputs and forwards it via fiber-optic cable to a second transducer, which outputs the signals via contacts. Distances of about 3 km can be covered directly via multi-mode fiberoptic cables. The 7XV5461 repeater is available for distances up to 170 km via mono-mode fiber-optic cable. (Fig. 13/60)

With two transducers connected to 7XV5461, up to four binary signals can be transferred. One application is phase-selective intertripping.

With a communication converter, the transducer can be interfaced to different kinds of communication links. Modern  $N \times 64$  kbit/s digital networks can be used. Existing pilot wires can also be used for data exchange between the relays. The data to be exchanged includes directional signals, intertrip signals and other information.

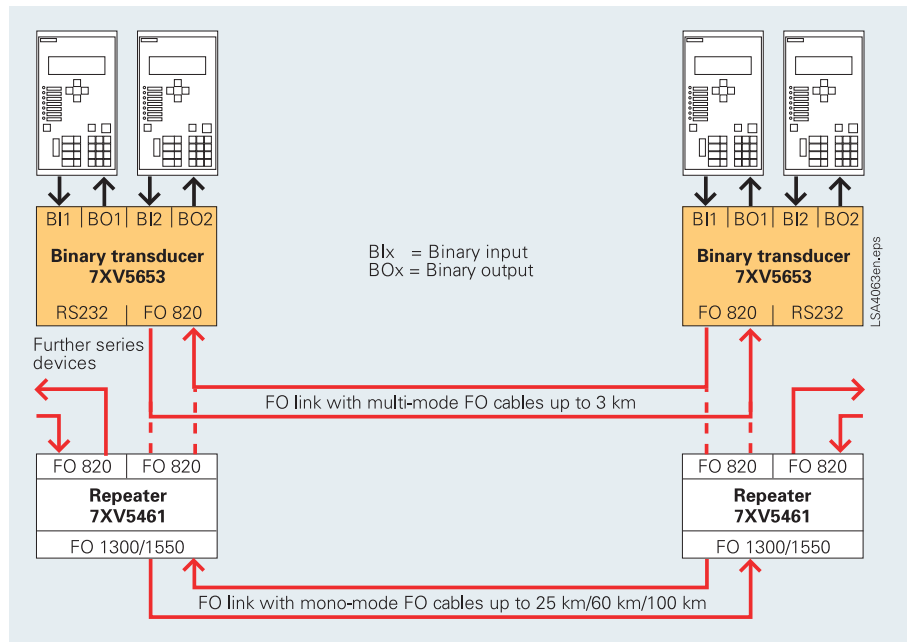


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### Construction

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.

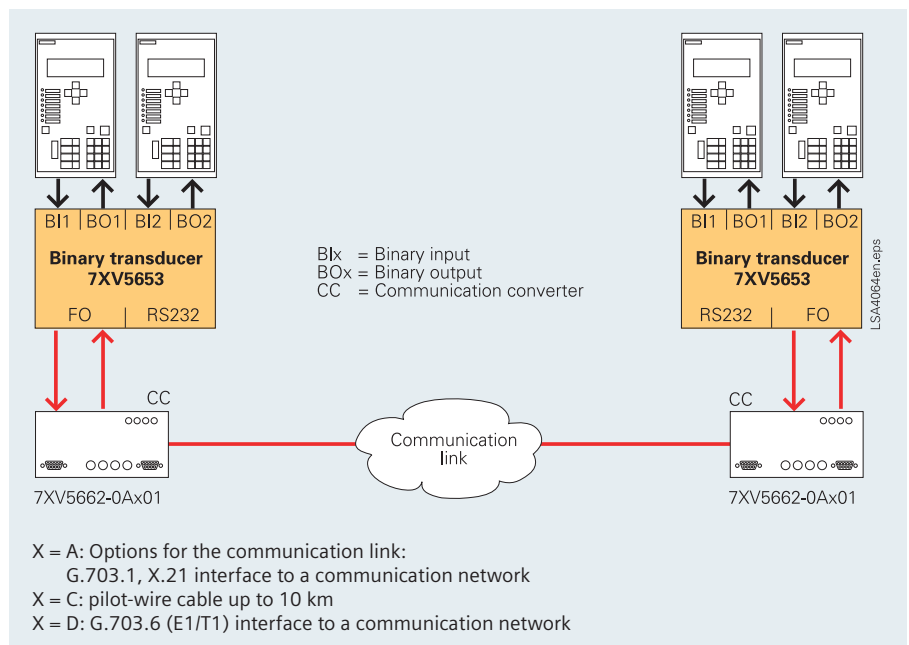


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### Technical data

#### Rated auxiliary voltage

DC 24 to 250 V and AC 60 to 230 V ± 20 % without switchover

#### Current consumption

Approx. 0.15 to 0.25 A

#### LEDs

6 LEDs	
1 x green	Operating voltage o.k.
2 x yellow	Contact unit ½ active
2 x yellow	Command relay ½ active
1 x red	Alarm

#### Connectors

Power supply	2-pole Phoenix screw-type terminal
FO connection	820 nm FSMA screw-type connector
FO connection	820 nm ST connector
Binary inputs	4-pole Phoenix screw-type terminal
Alarm contact	2-pole Phoenix screw-type terminal

#### Light idle state

Light ON/OFF selectable

#### Housing

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>7XV5653 two-channel binary transducer</b>  Binary signal transducer Plastic housing, for snap-on mounting onto 35 mm EN 50022 rail Rated auxiliary voltage DC 24 to 250 V and AC 110 to 230 V with alarm relay, 2 binary inputs, 2 trip contacts, 1 alarm relay with potential-free contact for pilot-wire supervision Connection to a second transducer via FO cable for 62.5/125 μm and 820 nm wavelength (ST connectors). Max. distance 3 km. Connection to a second transducer via a communication system with a RS232 interface, 9-pin SUB-D connector, baud rate settable by DIP-switches Fiber-optic connectors with ST connector	<b>7XV5653-0BA00</b>