

7XV5105 Bus Cable for Time Synchronization (for 7SD5 Relays)



Fig. 13/12 Y-cable 7XV5105

Function overview

- Opto-electrical solution for SIPROTEC 4 7SD5 differential protection relays with IRIG-B interface (Port A)
- Direct connection of 7SD5 protection relays via IRIG-B interface to sync.-transceiver 7XV5654
- Transmission of time telegram and seconds pulse at the same time
- 4 orderable cable lengths from 1 m to 10 m
- 4-wire, twisted and shielded cable with 9-pin SUB-D connectors
- Metal plug connector casing of compact dimensions, with fixing screw and strain relief for cable connections
- Max. extent of electrical bus 20 m within building

Description

The evaluation of fault records, operational alarms and fault signals calls for a millisecond-accurate absolute time stamp. The differential protection relays have an internal clock on a quartz basis, by means of which the protection is normally synchronized. In special applications, GPS radio clocks are used to synchronize the 7SD5 differential protection relays with the absolute time. These clocks send a time telegram together with a microsecond-accurate seconds pulse, so that the transmission time in both the sending and the receiving direction can be precisely measured. All the devices in each system are connected in parallel via an electrical bus, so that all devices receive the time information and the seconds pulse at the same time. By means of the prefabricated bus cables 7XV5105, the 7SD5 relays can be connected via their IRIG-B interface (Port A) directly to the sync.-transceiver 7XV5654. The maximum length of the electrical bus when the prefabricated cables are used is 20 m. Relevant applications are described in the manual for the sync.-transceiver 7XV5654.

Application

Notes on the IIRIG-B bus

In this system solution only the 24 V DC time synchronization inputs (Port A) of the SIPROTEC 4 protection relays are used. 2-core 7XV5104 cables are available for time synchronization of the SIPROTEC 4 protection relays without additional seconds pulse.

The housings of all bus users must be properly mutually earthed, as otherwise dangerous earth potential currents can flow via the bus cable shield.

Typical applications

The 9-pin male connector of the Y-bus cable S1 always comes from the direction of the radio clock or sync.-transceiver and provides via the 1, 3, 5 or 10 m cable and the 9-pin male connector the connection to the first and subsequent bus devices. At connector S2 a 9-pin female connector B3 is provided (on a 20 m long cable) to extend the bus. If more than six SIPROTEC 4 units are to be connected to the radio clock, up to 4 sync.-transceivers 7XV5654 can be connected, each with 6 protection relays. (For typical applications see the 7XV5654 manual).

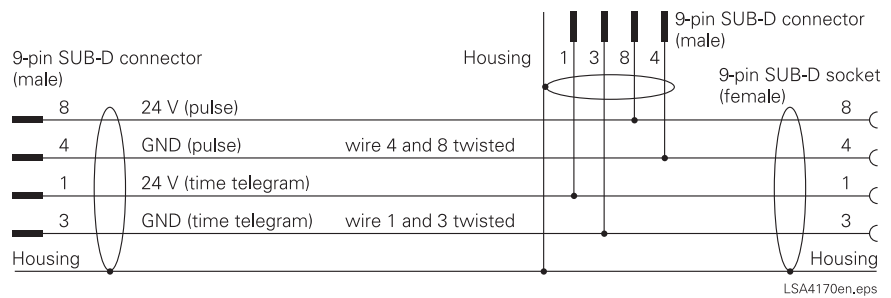


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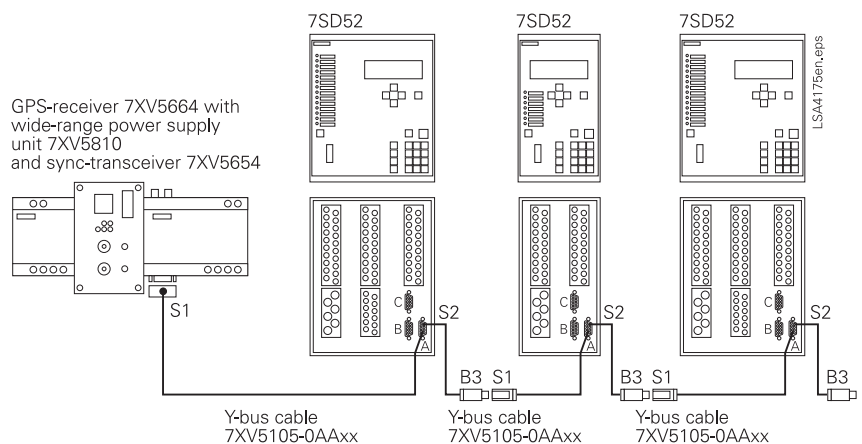


Fig. 13/14
Connection of max. six SIPROTEC 4 protection relays 7SD5 to the IIRIG-B bus via prefabricated Y-bus cable

Selection and ordering data

Description	Order No.
Y-connection cable IIRIG-B / DCF77	7XV5105-0AA□□
Y-connection cable for direct connection of a SIPROTEC 4 differential protection relay with IIRIG-B / DCF77 connection to sync.-transceiver 7XV5654 and bus extension. Copper cable 4-wire, shielded, with 9-pin SUB-D connectors	
Length 1 m	0 1
Length 3 m	0 3
Length 5 m	0 5
Length 10 m	1 0
Extension cable (copper)	
Cable for bus length extension. Copper cable with 4 wires, shielded with 9-pin SUB-D connectors	
Length 10 m	7XV5105-1AA10
Adapter / accessories	
Adapter cable to two sync.-transceivers 7KE6000-8Ax, length 0.3 m shielded, 2 wires with end sleeves to 9-pin SUB-D connector (female)	7XV5105-2AA00