

For the evaluation of fault records, operational- and fault events the millisecond accurate determination of the absolute time is required. The SIPROTEC 4 devices have an internal clock on quartz crystal oscillator basis, which have a deviation from the absolute time after a while. For the exact synchronization radio clocks or GPS-receivers are used. The output of such receivers is a minute pulse or a time telegram, for example DCF77 or IRIG-B, which allows to set the absolute time in the relays from external. For this the devices are connected parallel with an electrical bus and receive the time telegram exact at the same time at Port A or a binary input. With the use of prefabricated cables 7XV5104 the SIPROTEC 4 devices can be connected with there IRIG-B / DCF77 input (Port A) to the Sync.-Transceiver 7XV5654. The maximal length of the bus with this cables is 20 m. Appropriate applications are described in the manual of the Sync.-Transceiver 7XV5654.

Features:

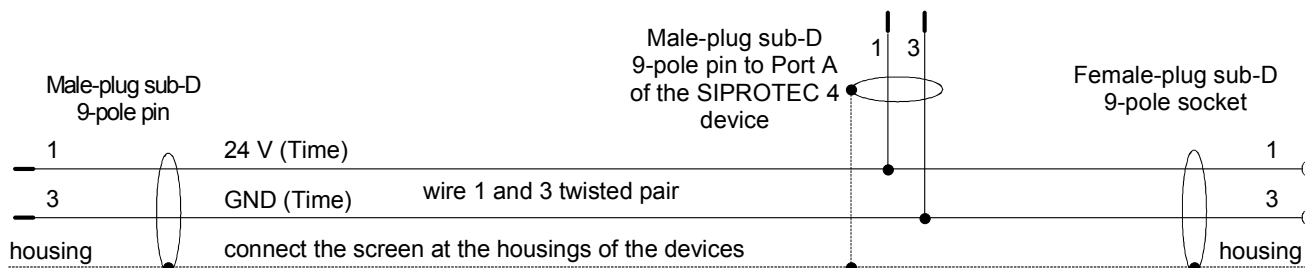
- Optical - electrical solution for SIPROTEC 4 devices with DCF77 / IRIG-B interface (Port A)
- Direct connection of Port A of the SIPROTEC 4 devices to the Sync.-Transceiver 7XV5654
- Adapter cable 7XV5104-3AA00 for max. 12 devices connected to the Sync.-Transceiver
- 4 orderable cable length from 1 m to 10 m
- 2-copper wires, shielded and twisted pair cable with 9 pole SUB-D plugs
- Metallic plug connector housings with mechanical strain relief of the cable connections and fixing bolts
- Compact dimension of the plugs
- Maximum extension of the electrical bus up to 20 m within the boundaries of an earthing system



Fig. 1: Y-cable 7XV5104

Notes on the time synchronization bus

For this system application the 24 V DC inputs (Pin 1/3) of Port A of the SIPROTEC 4 devices are only used (see below). For the synchronization of differential protection relays 7SD52 with an additional second pulse the cable 7XV5105 must be used. The housing of all devices connected to the bus must be effectively earthed to a common earthing system to avoid dangerous currents flowing via the cable screen of the bus due to earth potential differences.



Application

The 9-pole male plug of the Y-bus cable S1 always comes from the direction of the radio clock or the Sync.-Transceiver and provides via the 1, 3, 5 or 10 m long cable and the 9-pole male plug S2 the connection to the first and further devices at the bus. At the plug S2 a 20 cm long cable with 9-pole female plug connector B3 is provided for extension of the bus. Should more than 6 devices to be attached to the Sync.-Transceiver 7XV5654, the adapter cable 7XV5104-3AA00 distributes the two electrical outputs at the 9-pole sub-D connector X1 of the Sync.-Transceiver to two electrical 24 V buses for each maximum 6 devices (applications see in the manual of Sync-Transceiver 7XV5654).

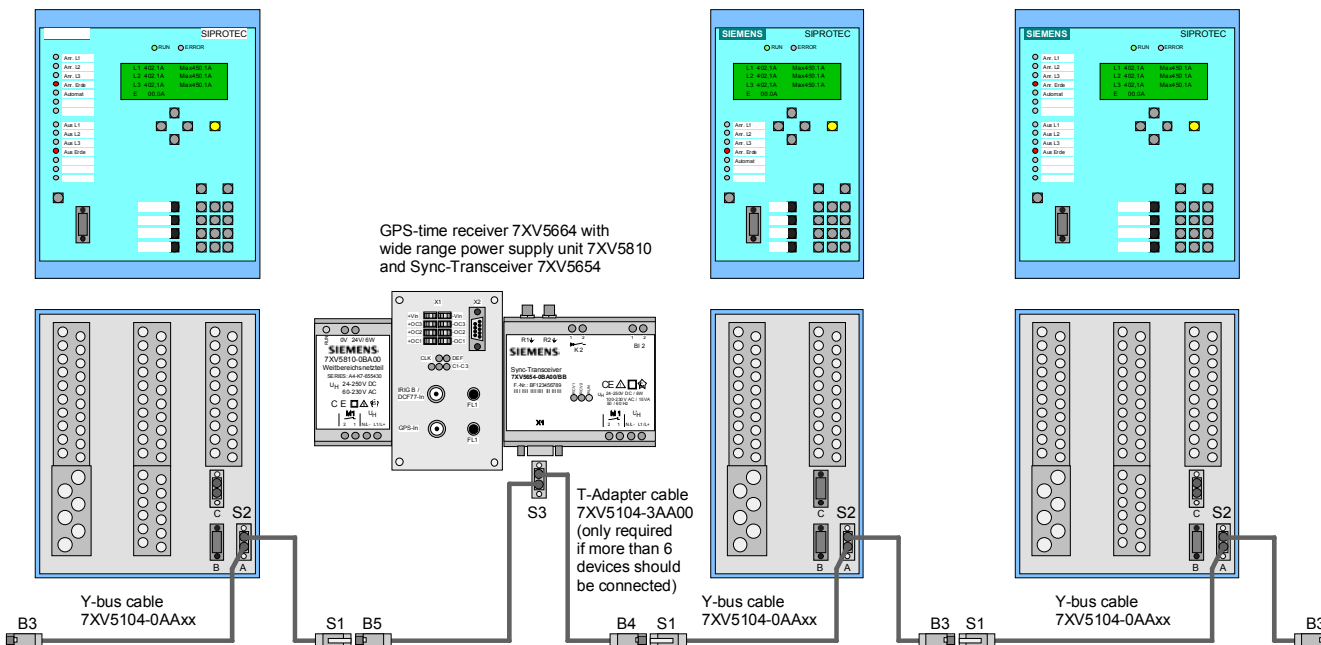


Fig. 2: Connection of max. 12 devices to the Sync.-Transceiver 7XV5654 with Y-bus cables and T-adapter cable

Selection and Ordering data

Y-connection cable for IRIG-B / DCF77 time telegrams	7 X V 5 1 0 4 - 0 A A	
Y-connection cable for the connection to Port A of SIPROTEC 4 devices. For the connection and extension of the time synchronization bus with IRIB-B or DCF77 telegrams. Twisted pair copper cable, 2-wires, shielded with 9-pole sub-D connectors.		
Length 1 m		0 1
Length 3 m		0 3
Length 5 m		0 5
Length 10 m		1 0

Bus length extension cable	7 X V 5 1 0 4 - 1 A A	
Cable for the bus length extension. Copper cable with 2-wires, shielded with 9-pole sub-D plugs.		
Length 10 m		1 0

Adapter - cable / accessories	7 X V 5 1 0 4 -		A A 0 0
Adapter cable to Sync.-Transceiver 7KE6000-8Ax Length 0,3m Shielded, 2-wires with crimp lugs to 9-pole sub-D plug (female)		2	
T-adapter cable to Sync-Transceiver 7XV5654-0BA00 Distributes the two electrical outputs at X1 (9-pole sub-D female plug) of 7XV5654 into 2 electrical buses for each max. 6 SIPROTEC 4 devices. 9-pole sub-D male plug to two 9-pol. Sub-D female plugs Copper cable with 2-wires, shielded (Length 0,3m)		3	

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