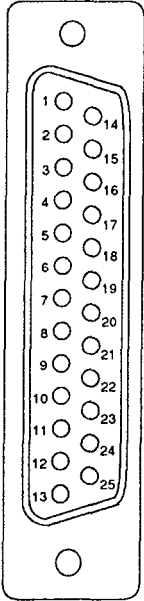


8.1 Serial Link and Supply Connector Pin Arrangement

Serial link: 25-pin, female subminiature (SUB D) connector, type HE50 NF-C 93.425.






| Pin Number | DESIGNATION | FUNCTION |
|------------|-------------|---|
| 1 | — | Chassis ground |
| 2 | TXD | RS 232 Transmission |
| 3 | RXD | RS 232 Reception |
| 4 | +TD | RS 422/485 Transmission |
| 5 | -TD | RS 422/485 Transmission |
| 6 | +RD | RS 422/485 Reception |
| 7 | OV | RS 232/RS 422 Common |
| 8 | COM | Common for multipoint address and Adjust (pins 12, 14-17, 24) |
| 9 | +REC | Isolated current loop reception |
| 10 | -REC | Isolated current loop reception |
| 11 | | Reserved |
| 12 | | Reserved |
| 13 | | Reserved |
| 14 | B0 | Terminal address in multipoint mode (binary 1) |
| 15 | B1 | Terminal address in multipoint mode (binary 2) |
| 16 | B2 | Terminal address in multipoint mode (binary 4) |
| 17 | B3 | Terminal address in multipoint mode (binary 8) |
| 18 | -RD | RS 422/485 Reception |
| 19 | | Reserved |
| 20 | +TRA | Isolated current loop transmission |
| 21 | -TRA | Isolated current loop transmission |
| 22 | | Reserved |
| 23 | | Reserved |
| 24 | PAR | Multipoint address parity |
| 25 | | Reserved |

Serial Link and Supply Connector Pin Arrangement

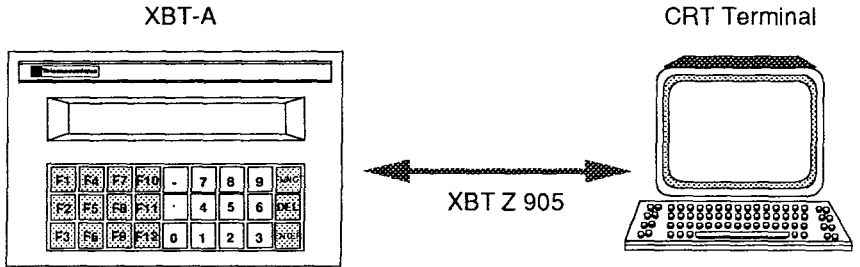
CAUTION:
BEFORE MAKING ANY CONNECTIONS TO THE SERIAL LINK CONNECTOR, ENSURE THAT THE PINS ON THE XBT-A CONNECTOR AND THOSE OF THE EXTERNAL LOGIC CORRESPOND OR SERIOUS DAMAGE MAY RESULT ON POWER-UP THAT WILL VOID THE WARRANTY.

Power Supply

| | | |
|--|---|--|
| | + | 24 V  |
| | - | 0 V  |
| |  | Chassis ground |

8.2 Connecting a CRT or TSX T407 Terminal

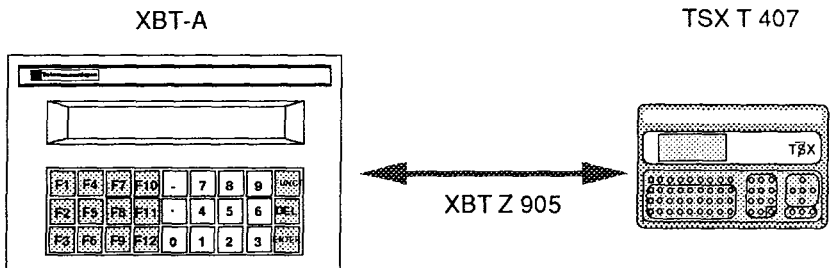
• Connecting a CRT Terminal



The connection between the CRT terminal and the XBT-A uses a 2.50 meter XBT Z 905 cable connected to the "LINE" input to the CRT terminal and to the "Serial" port of the XBT-A terminal.

The transmission parameters must be set first. To change the settings on the XBT-A terminal, refer to sub-section 4.5: Configuration, page 24.

• Connecting a TSX T 407 terminal

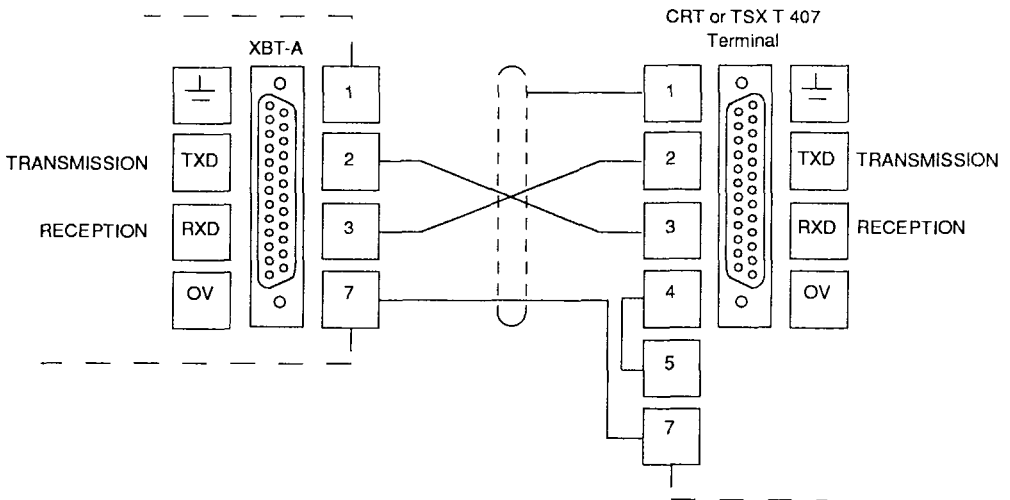


The connection between the TSX T407 programming terminal and the XBT-A uses a 2.50 meter XBT Z 905 cable.

- connected to the "Printer" port on the TSX T407,
- connected to the "Serial" port on the XBT-A,
- connect the XBT Z 905 cable with the end showing the reference number to the XBT-A.

Connecting a CRT or TSX T407 Terminal

XBT Z 905 cable pin arrangement:



8.3 Connecting a PC/PS Microcomputer

The XBT-A terminal can be connected to a PC/PS microcomputer for performing operations on the application (creation, storage, modification or transfer) in conjunction with XBTL-100 software.

The characteristics of the data link (RS 232C) cannot be changed. Connection is made to the serial port of the microcomputer (COM 1).

. The following cables are available:

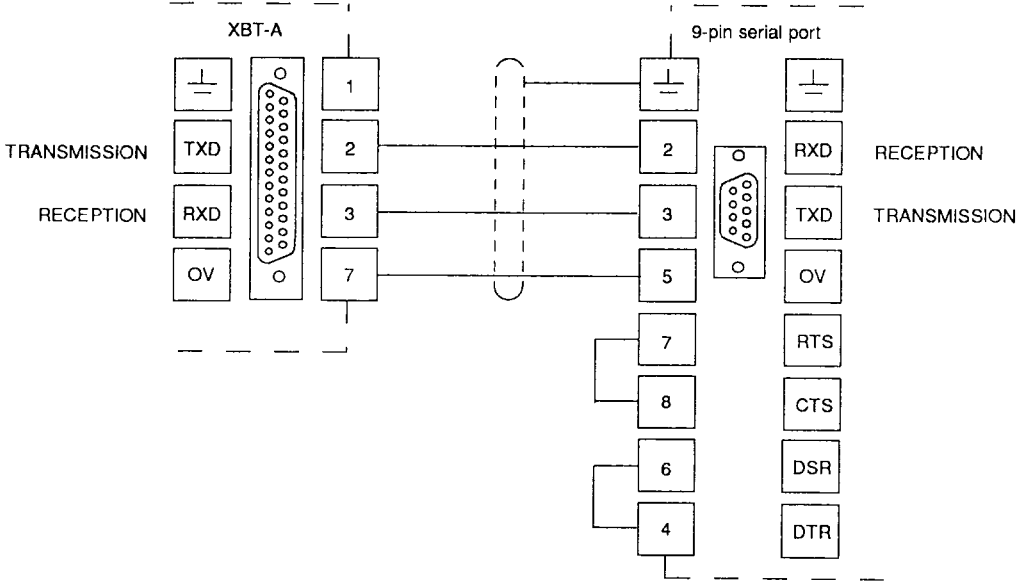
| PC/PS Serial port Connector | Cable | | Length |
|-----------------------------------|----------|---------|--------|
| | Ref. No. | Version | |
| 9-pin male | XBTZ915 | 21* | 2.50 m |
| 25-pin male | XBTZ905 | 21* | 2.50 m |
| 25-pin female | XBTZ9052 | 11 | 2.50 m |

* products available since July 1988

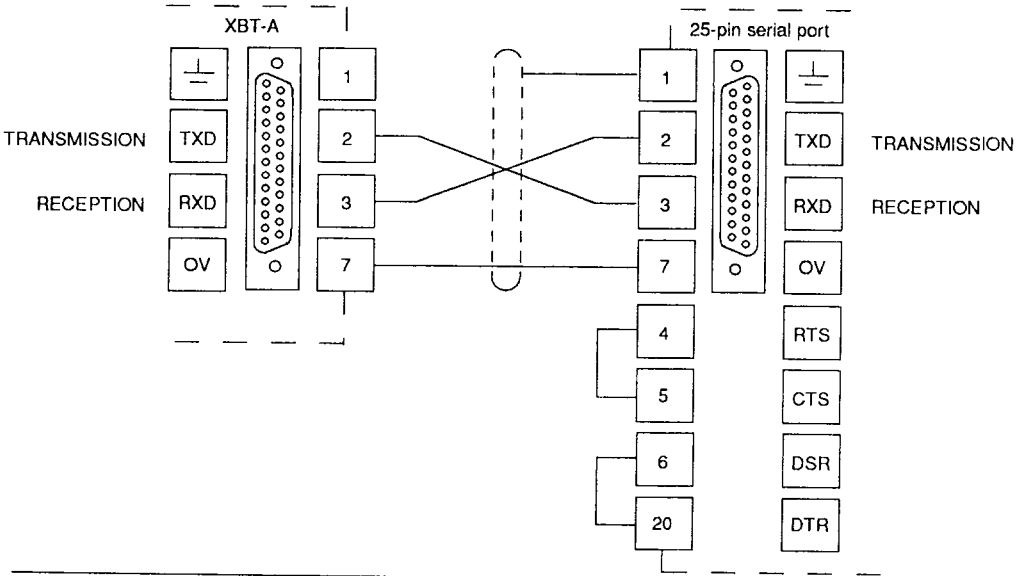
**ONLY RS 232 STANDARD COMMUNICATIONS CAN BE USED. THE
USE OF ANY OTHER TYPE OF COMMUNICATION VOIDS THE
TELEMECANIQUE WARRANTY**

Connecting a PC/PS Microcomputer

XBTZ915 cable pin arrangement:



XBTZ905 and XBTZ9052 cable pin arrangement:

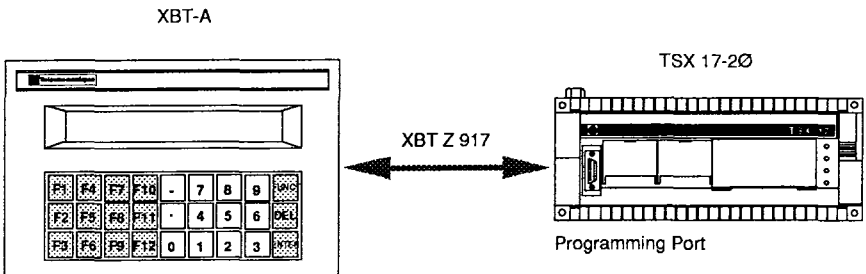
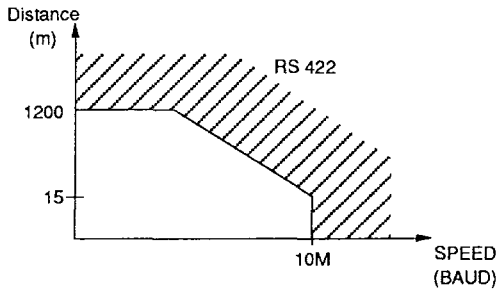


8.4 Connecting a TSX17-20 Micro-PLC

The XBT-A terminal connects to the programming port of a TSX 17-20 Micro-PLC via a 2.5 meter XBTZ 917 cable.

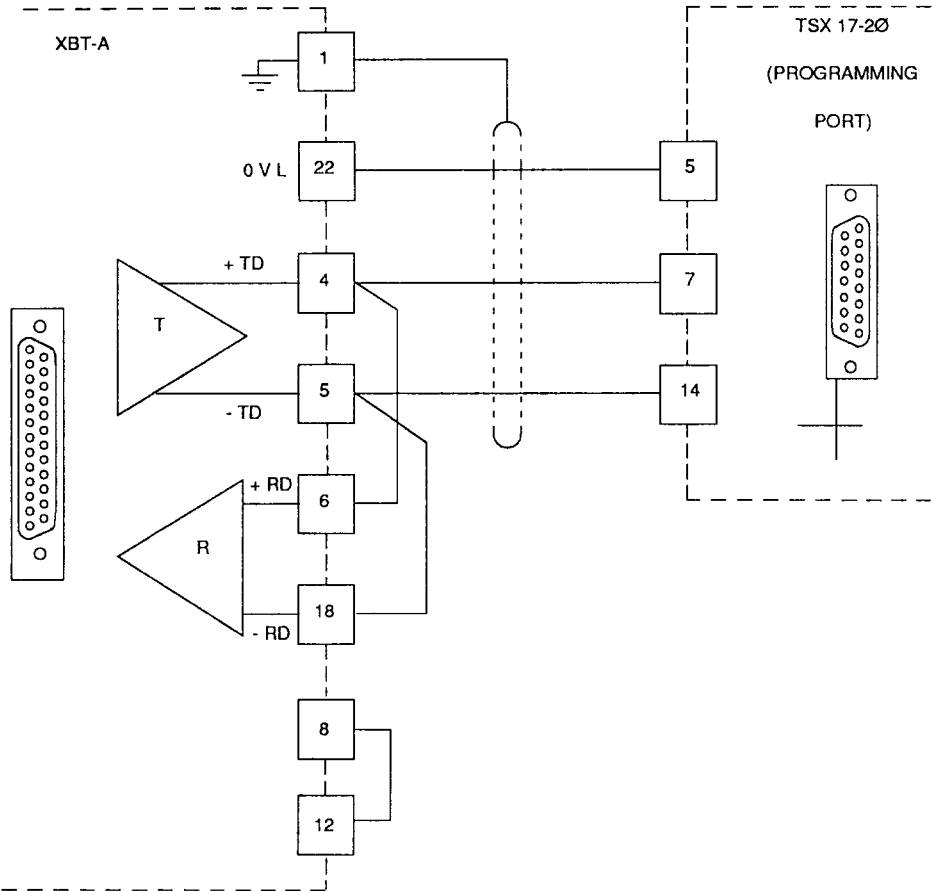
THE XBT-A TERMINAL OPERATES IN RS 485 ADJUST MODE
(2-WIRE DATA LINK), HALF DUPLEX EXCHANGE

Note: RS 485 is an extension of the RS 422 standard ("4-wire" differential transmission) that loops the transmitter back to the receiver in the XBT-A.



Connecting a TSX17-20 Micro-PLC

XBT Z 917 cable pin arrangement.



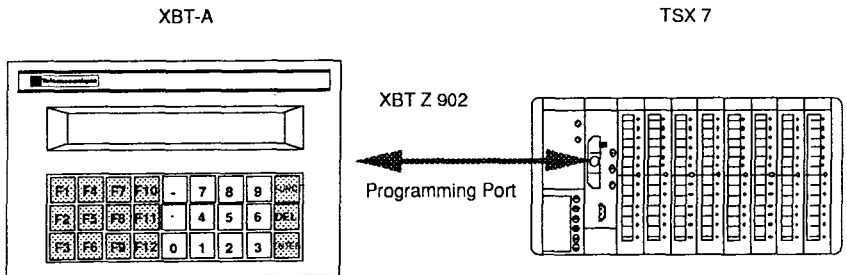
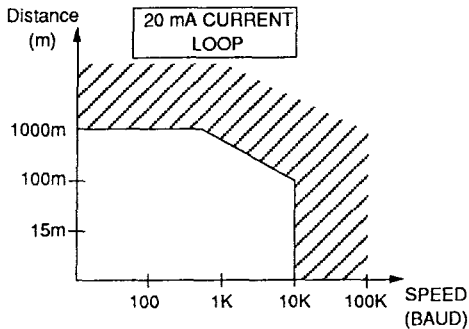
8.5 Connecting TSX 27/47 PLCs

The XBT-A terminal connects to the programming port of a TSX 17-20 Micro-PLC via a 2.5 meter XBTZ 902 cable.

**THE XBT-A OPERATES IN ADJUST MODE,
20 mA CURRENT LOOP.**

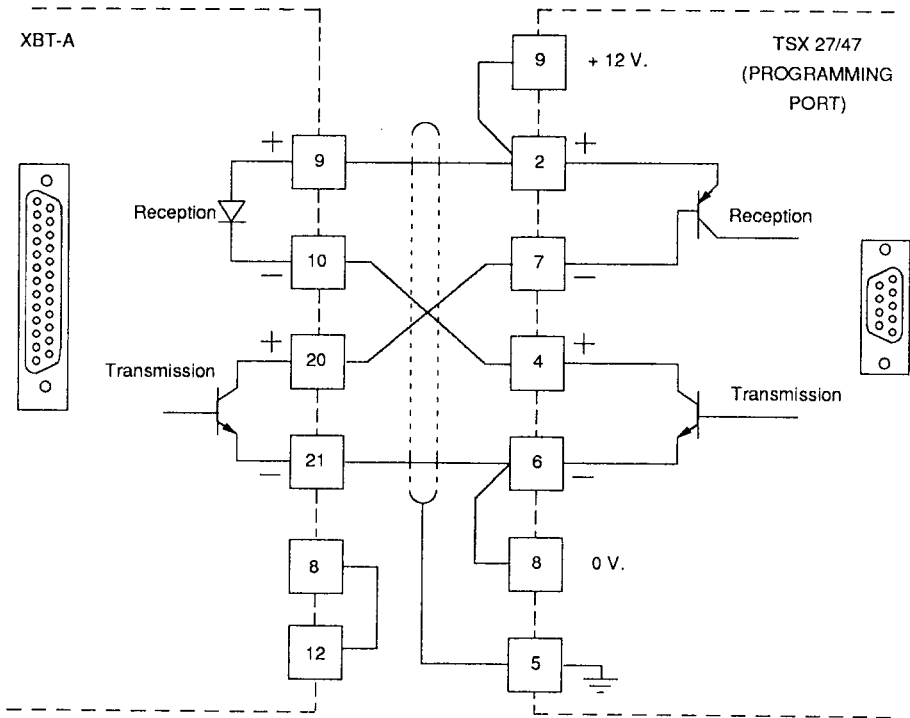
The supply for the current loop is provided by the TSX 27/47 (ACTIVE). Current limiting is ensured by the XBT-A (PASSIVE PROTECTED).

Note: the programming port of TSX 27 and TSX 47100 PLCs is not isolated. When using these PLCs, when the distance between the XBT-A and the TSX 27/47 is more than 3 meters, a XBT Z 9011/12 isolating device must be used between the two units (further details on the XBT Z 90.. in this section).



Connecting TSX 27/47 PLCs

XBT Z 902 cable pin arrangement.



Connecting TSX 27/47 PLCs

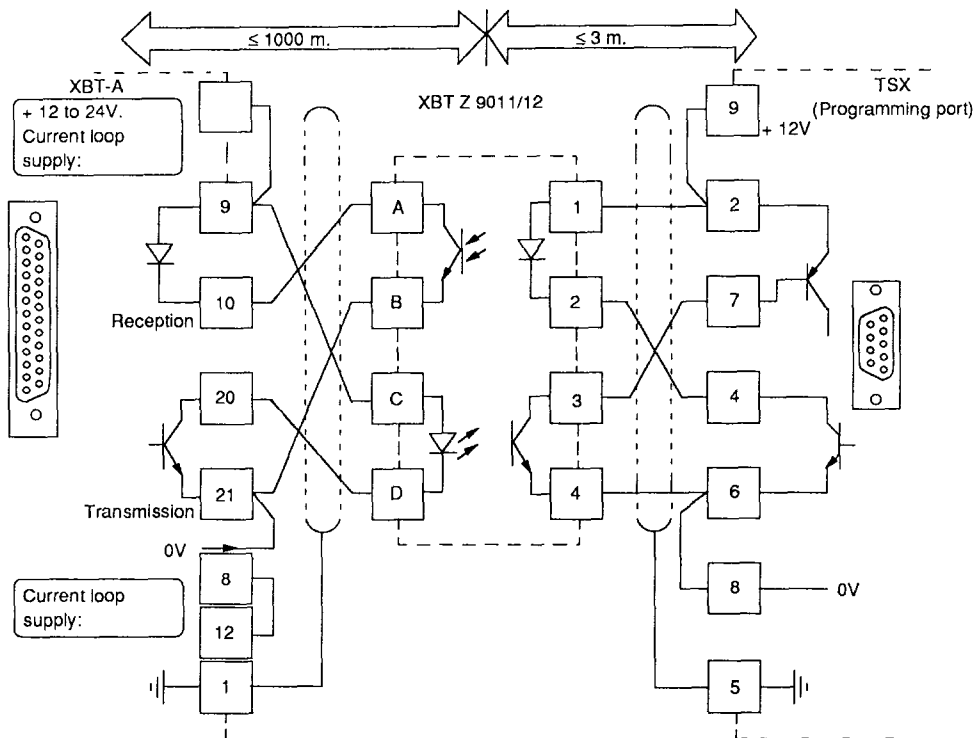
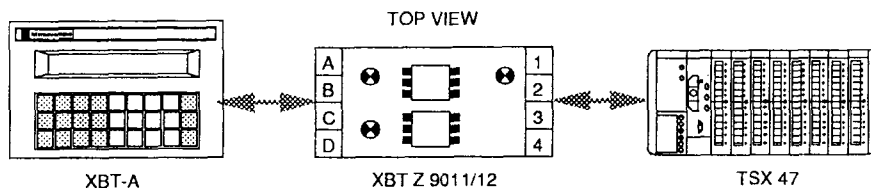
Isolating device for TSX 27 and TSX 47100

If the distance between the XBT-A terminal and the PLC is more than 3 meters, the XBT Z 9011/12 isolating device should be used. The distance between the PLC and the XBT Z 90.. must be less than 5 meters (connected by two shielded twisted pairs of not less than 0.6 mm² (AWG 22) gauge).

The distance between the XBT Z 9011/12 and the XBT-A terminal can be as much as 1000 meters (connected by two shielded twisted pairs of not less than 0.6 mm² (AWG 22) gauge).

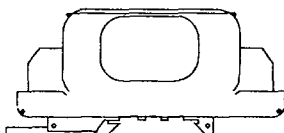
USING THE XBT Z 90.. MODULE LIMITS THE TRANSMISSION SPEED TO 9600 BAUD.

Connecting TSX 27/47 PLCs



Mechanical characteristics:

- XBT Z9011: symmetrical rail mount
- XBT Z9012: asymmetrical rail mount



Dimensions:

| | |
|--------|---------|
| Length | : 96 mm |
| Width | : 27 mm |
| Depth | : 42 mm |

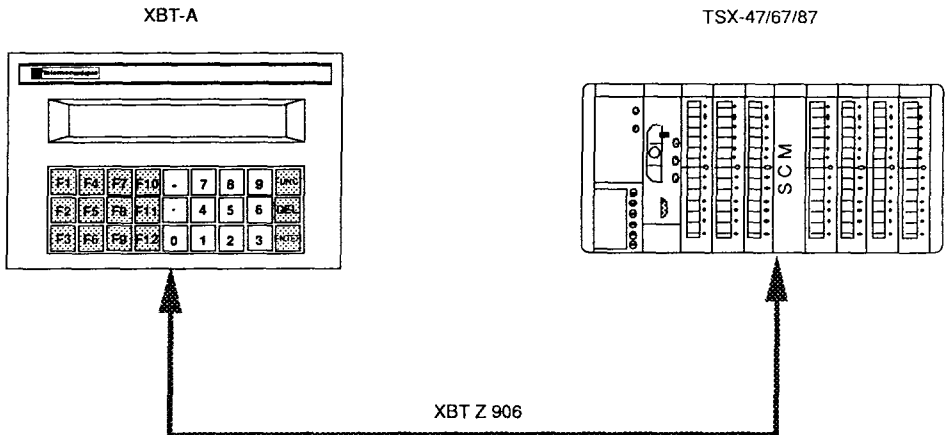
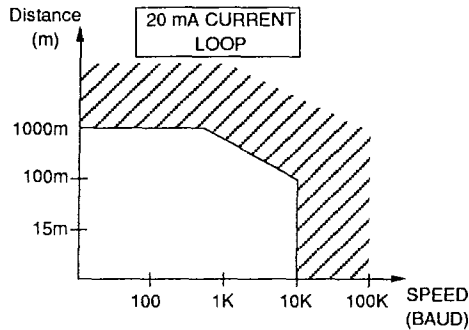
Transmission/Reception indication is provided by LEDs.

8.6 Connecting a Serial Communication Module

• Current loop connection

THE XBT-A OPERATES IN ASCII MODE,
20 MA CURRENT LOOP.

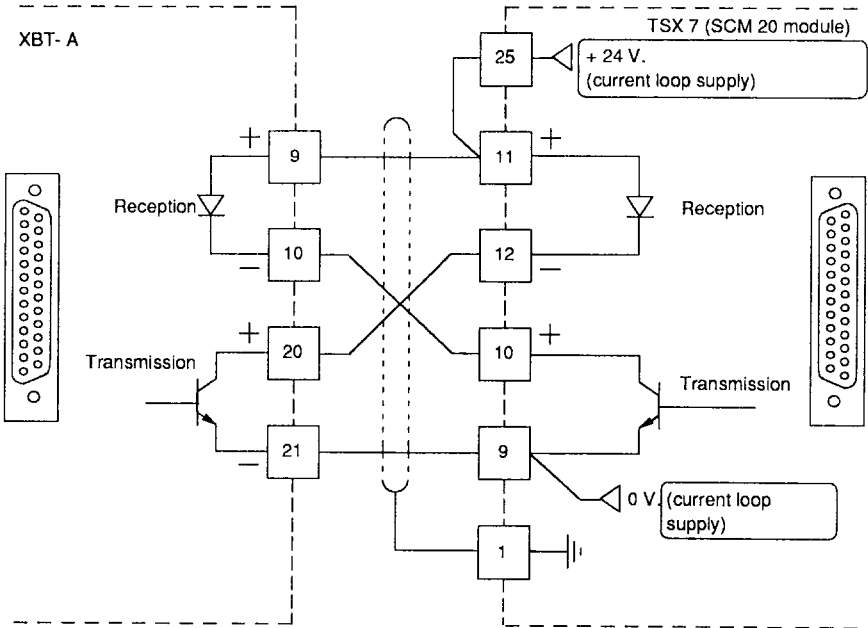
The power supply to the current loop is provided by the module (ACTIVE). The XBT-A ensures current limiting (PASSIVE PROTECTED). The maximum data link distance is 1000 meters (connected by two shielded twisted pairs of not less than 0.6 mm^2 (AWG 22) gauge). When used with TSX Series 7 PLCs, the XBT-A connects to the TSX SCM 20.. module via a 2.5 meter XBT Z 906 cable.



XBT Z 906 cable connection: Ref. no. end to XBT-A.

Connecting a Serial Communication Module

XBT Z 906 cable pin arrangement:



Connecting a Serial Communication Module

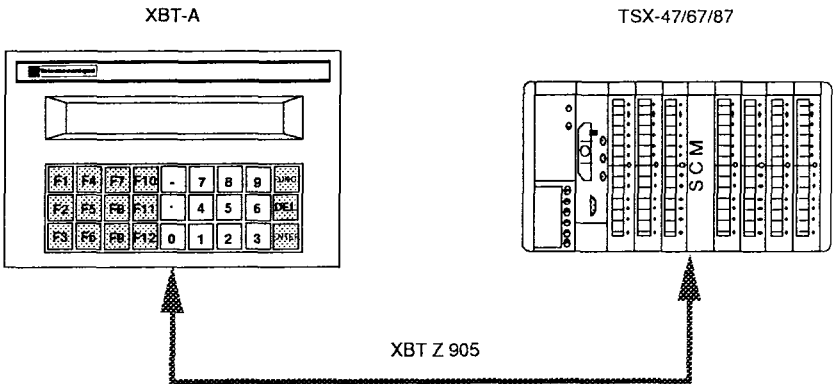
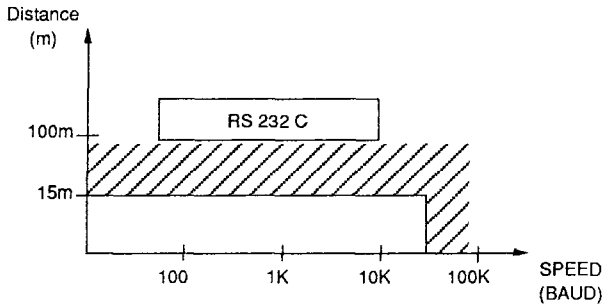
RS 232 C connection:

THE XBT-A TERMINAL OPERATES IN ASCII MODE.

The transmission parameters must be set. To do this, refer to sub-section 4.5.2, Configuration, page 26.

The maximum data link distance is 15 meters and connection via by two shielded twisted pairs of not less than 0.6 mm² (AWG 22) gauge).

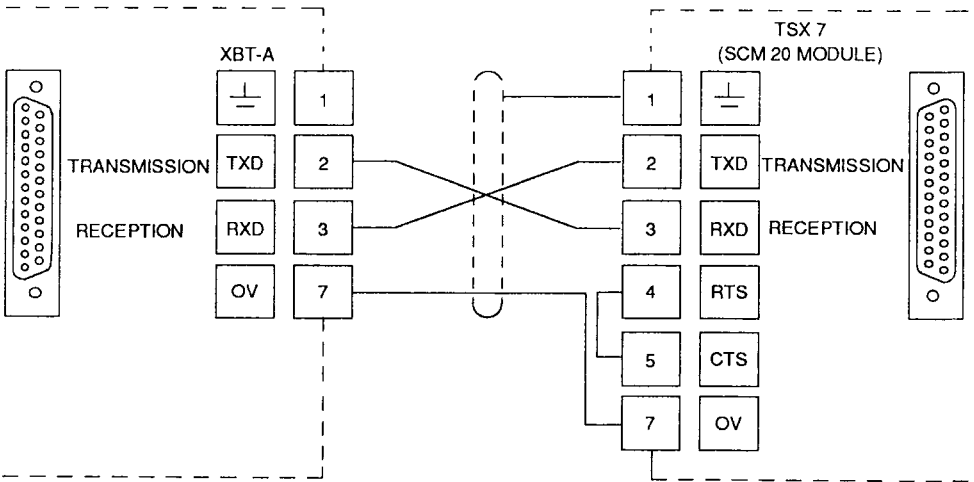
When used with TSX Series 7 PLCs, the XBT-A connects to the TSX SCM 20.. module via a 2.5 meter XBT Z 905 cable.



XBT Z 905 cable connection: Ref. no. end to XBT-A.

Connecting a Serial Communication Module

XBT Z 905 cable pin arrangement:

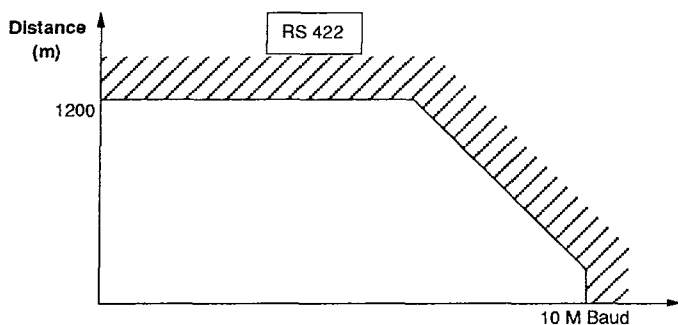


Connecting a Serial Communication Module

RS 422 connection:**THE XBT-A TERMINAL OPERATES IN ASCII MODE**

The transmission parameters must be set. To do this, refer to sub-section 4.5.2 Configuration, page 26.

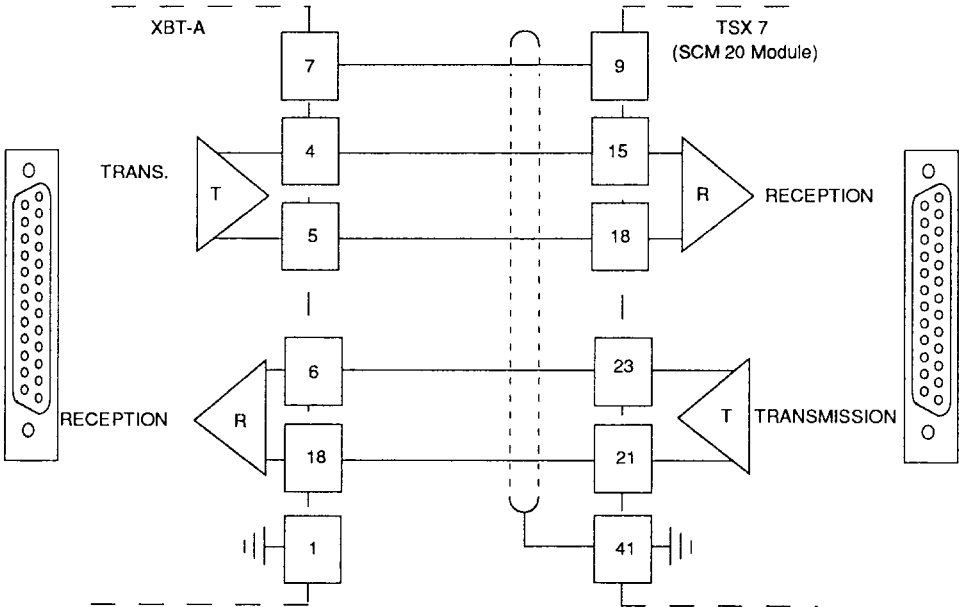
This standard defines a differential transmission mode. This "4-wire" data link enables operation in Full Duplex mode.



Connect via by two shielded twisted pairs of not less than 0.6 mm^2 (AWG 22) gauge).

Connecting a Serial Communication Module

Connection example with a TSX Series 7 PLC
(and SCM 20 Serial Communication Module).



Note: RS 485 operation is an extension of the RS 422 standard. It loops the transmitter back to the receiver on each device (connect +TD to +RD and -TD to -RD).

This "2-wire" data link requires Half Duplex operation.

8.7 Multipoint Connection

- **Serial multipoint**

XBT-A terminals operate in ASCII, PROTECTED PASSING CURRENT LOOP MODE.

The line power supply is provided by an external source or by the Serial Communication Module (ACTIVE).

MULTIPOINT LOOP POWER SUPPLY VOLTAGE:
 $V_{MAX} = 4 V \times N = 48 V$ (N = NUMBER OF TERMINALS CONNECTED)

All XBT-A terminals must be connected in series.

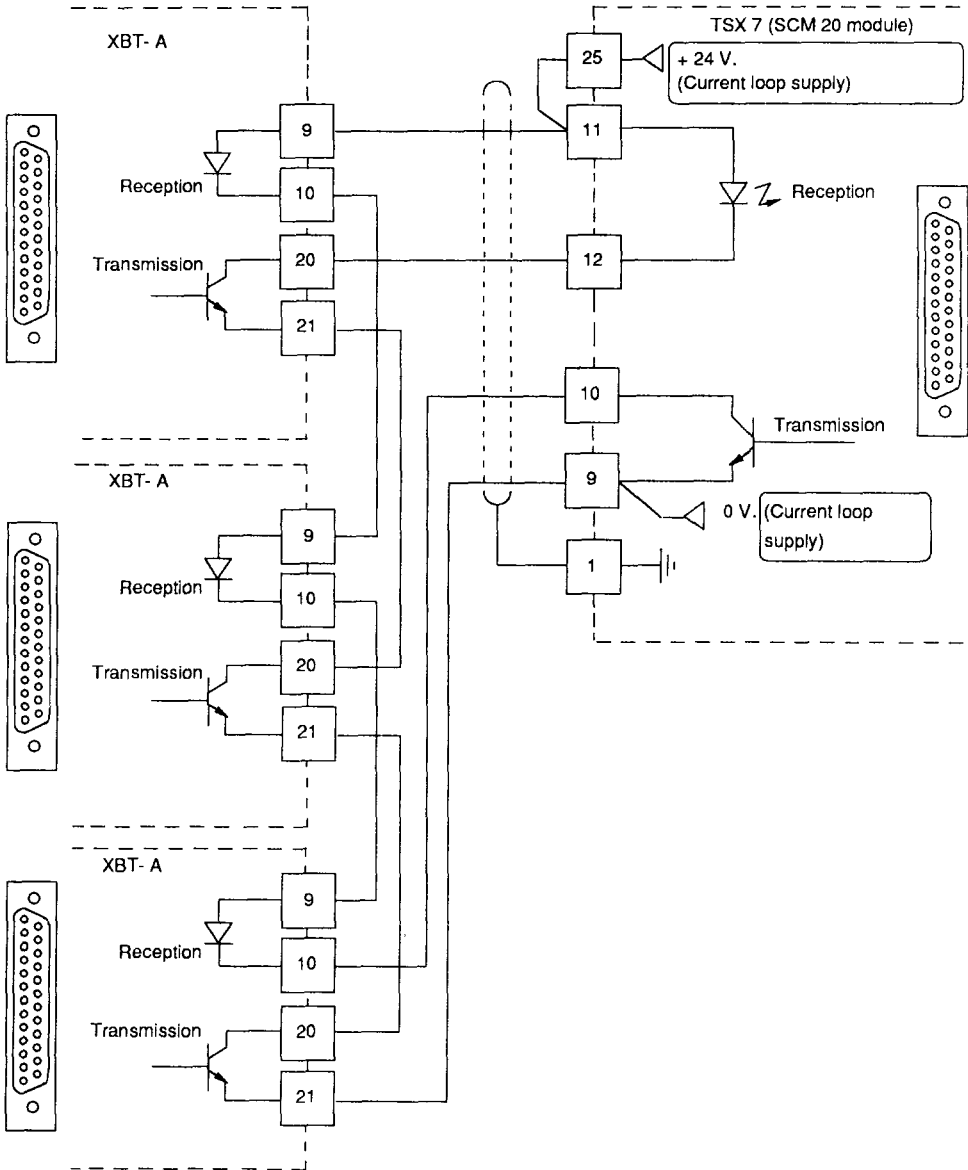
Current limiting is ensured by XBT-A terminals (PASSIVE PROTECTED).

XBT-A terminals must be addressed (coded) by wiring in the serial connector.

Refer to sub-section 6.8, Multipoint Operation, page 96.

Multipoint Connection

Connection example for a TSX Series 7 PLC and an SCM 20 module.



Multipoint Connection

Multipoint parallel

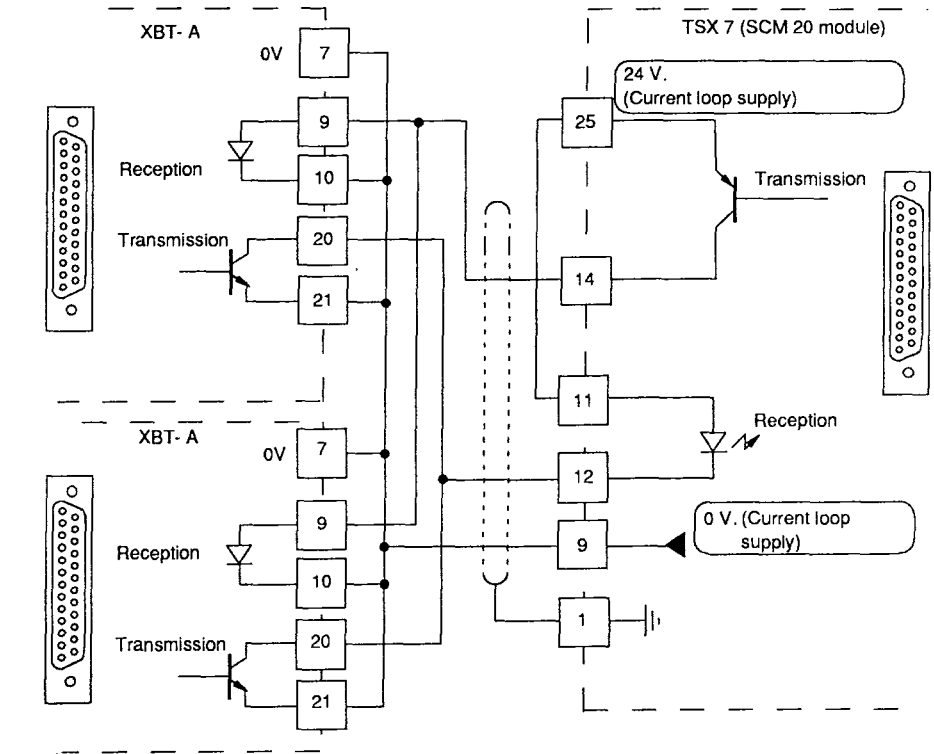
XBT-A TERMINALS OPERATE IN ASCII MODE WITH BLOCKED CURRENT LOOP

The line power supply is provided by an external source or by the Serial Communication Module (ACTIVE).

All XBT-A terminals must be connected in parallel. XBT-A terminals must be addressed (coded) by wiring in the serial connector.

Refer to sub-section 6.8, Multipoint Operation, page 96.

Connection example for a TSX Series 7 PLC and an SCM 20 module:



Multipoint Connection

- Multipoint parallel

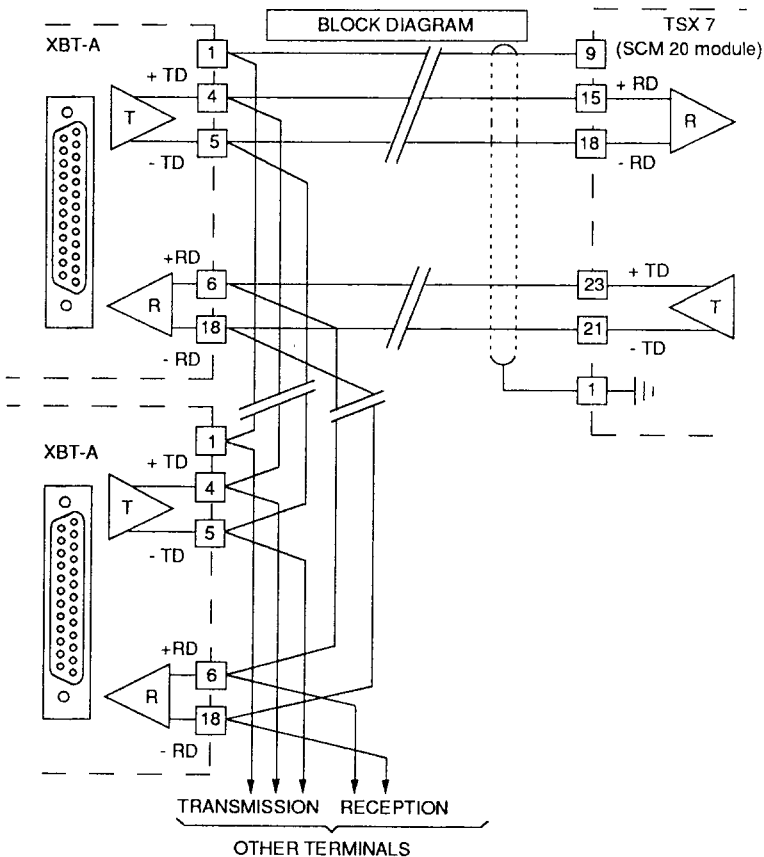
XBT-A TERMINALS OPERATE IN ASCII RS 422 MODE

- All Slave receive lines are wired in parallel to the Master transmission line.
- All Slave transmit lines are wired in parallel to the Master reception line.

The number of Slave stations is restricted to 10.

XBT-A terminals must be addressed (coded) by wiring in the serial connector.

Refer to sub-section, 6.8 Multipoint Operation, page 96.



Multipoint Connection

The length of passive drops must not exceed 10 meters.

The total line length must not exceed 1200 meters.

To install this type of data link, line adapters may be required.

For further information refer to the TSX SCM Installation Manual (Ref. No. TSX D43 724).

**TELEMECANIQUE DECLINES RESPONSIBILITY FOR ANY
OPERATING PROBLEMS THAT MAY OCCUR**

Note: RS 485 operation is possible by looping the receiver back to the transmitter (connect + TD to + RD and - TD to - RD) on all XBT-A terminals and on the 2-wire master logic.

All devices connected in RS 485 mode must operate in Half Duplex mode. Address coding limits the number of devices to a maximum of 15.

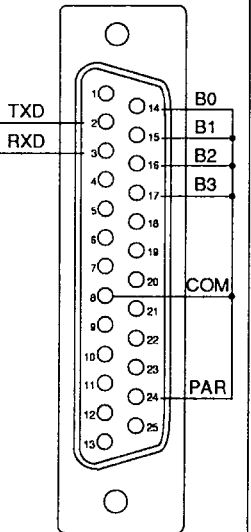
8.8 Connecting the Test Plugs

In Configuration mode, selecting the Tests procedure enables tests to be performed to check for correct operation of XBT-A terminal sub-units, especially the physical data links and their addresses.

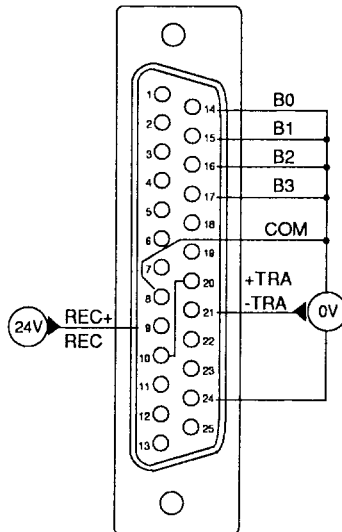
Before starting a test of the selected data link (RS 232, 20MA CL, RS 422), it is necessary to fit the appropriate test plug on the serial link connector of the XBT-A terminal. The test is started by pressing the **DEL** key.

TEST PLUGS

RS232 + ADDRESSES



CL + ADDRESSES (use an external 24V supply)



RS422 + ADDRESSES R = 56 Ω 1/2W

