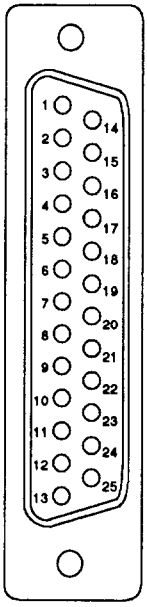
9.1 Pin connections

Type of connector XBT



25 pin female subminiature (SUB D) type HE50 NF-C 93.425.

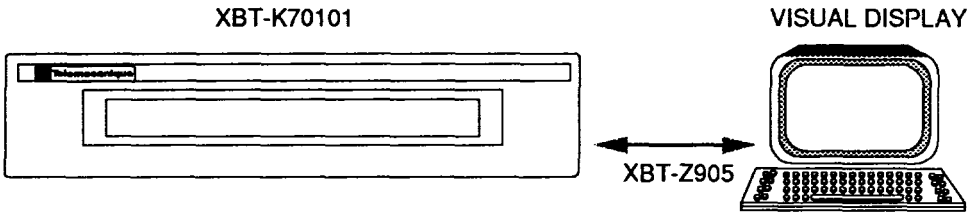
Pin n°	DESIGNATION	FUNCTION
1	PG	Physical Ground ⏚
2	TXD	Transmission RS 232
3	RXD	Reception RS 232
4	A	Transmission RS 422/485 (TXD+)
5	B	Transmission RS 422/485 (TXD-)
6	A'	Reception RS 422/485 (RXD+)
7	SG	COMMON RS 232
8	COM	COMMON multidrop and adjustment address (pins 12,14 to17, 24)
9	RXD+	Reception isolated current loop
10	RXD-	Reception isolated current loop
11		Reserved
12	REG	Select ADJUSTMENT MODE
13		Reserved
14	B0	Terminal address for multidrop operation (binary 1)
15	B1	Terminal address for multidrop operation (binary 2)
16	B2	Terminal address for multidrop operation (binary 4)
17	B3	Terminal address for multidrop operation (binary 8)
18	B'	Reception RS 422/485 (RXD-)
19		Reserved
20	TXD+	Transmission isolated current loop
21	TXD-	Transmission isolated current loop
22	SG	Common RS 422/RS 485
23		Reserved
24	PAR	Parity, multidrop address
25		Reserved

WARNING : BEFORE MAKING A CONNECTION, YOU SHOULD CHECK THE CORRESPONDENCE BETWEEN THE XBT-K TERMINAL PINS AND THE ASSOCIATED AUTOMATION SYSTEM. OTHERWISE DAMAGE MAY OCCUR ON POWER-UP INVALIDATING THE WARRANTY

TO ENSURE A GOOD CONNECTION, SECURE THE LINK CABLE WITH THE TWO SCREWS

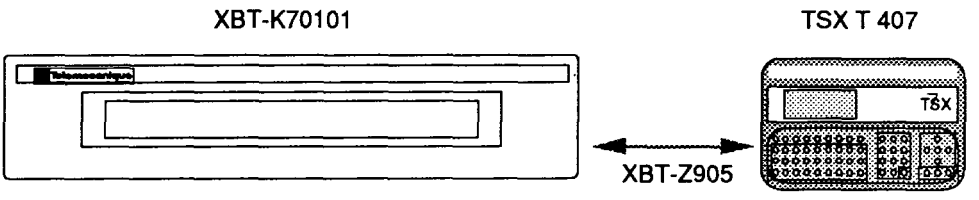
9.2 Configuration

9.2.1 With a VISUAL DISPLAY terminal



A two metre cable, type XBT-Z905, is used to connect the "LINE" port on the visual display terminal to the "SERIAL LINK" port on the XBT-K70101 display terminal.

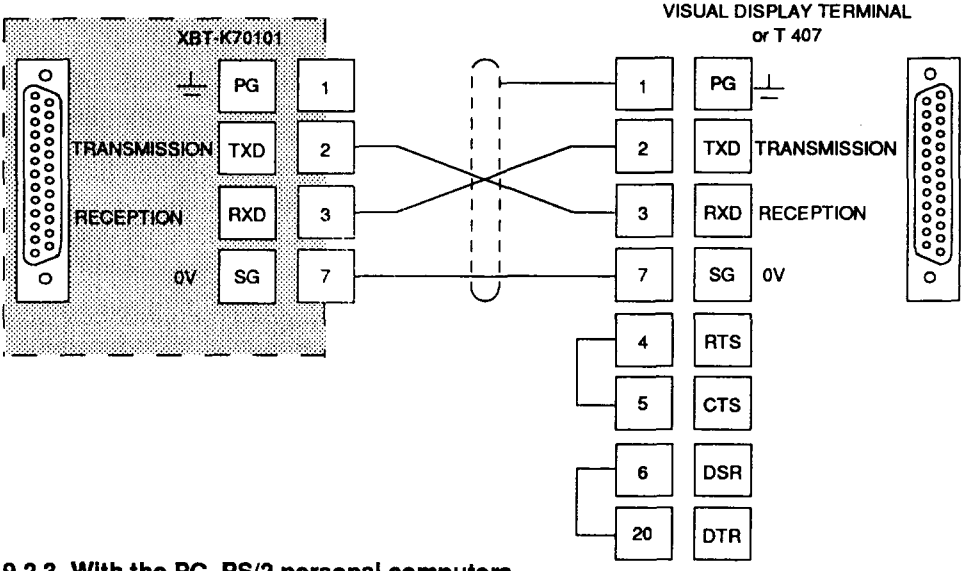
9.2.2 With the T 407 terminal



The connection between the T 407 programming terminal and the XBT-K70101 display is made using the two metre cable type XBT-Z905.
- to the "PRINTER" port on the T 407 terminal,
- to the "SERIAL" link connection on the XBT-K70101 display,
- when connecting the XBT-Z905 cable, connect the end marked with the product reference to the XBT-K

Configuration

• **Pin connections for cable XBT-Z905 and XBT-Z9052**



9.2.3 With the PC, PS/2 personal computers

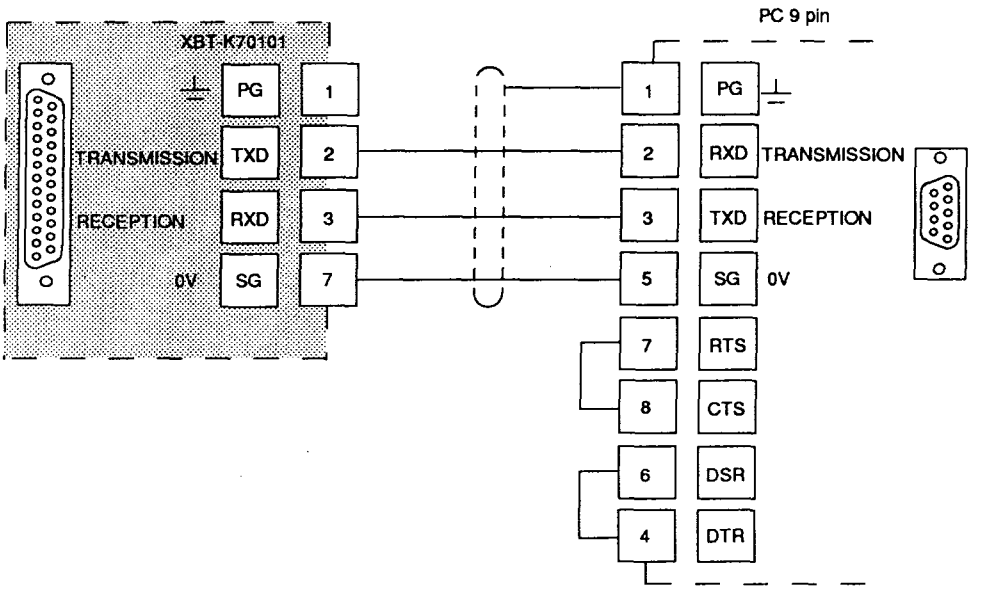
The XBT-K70101 terminal may be connected to a PC, PS/2 personal computer for application operations (creation, storage, modifications) using the XBTEL® programm.
The connection is made to the serial port on the PC, PS/2 (COM 1).

Serial Port connector used on the PC, PS/2	Cable		Length
	Reference	Index	
9 pin male	XBT-Z915	21	2,50 m
25 pin female	XBT-Z905	21	2,50 m
25 pin male	XBT-Z9052	11	2,50 m

ONLY THE RS 232 STANDARD MAY BE USED.
TELEMECANIQUE WILL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE WHATSOEVER SHOULD ANY OTHER TYPE BE USED.

Configuration

- **Pin connections for cable XBT-Z915**

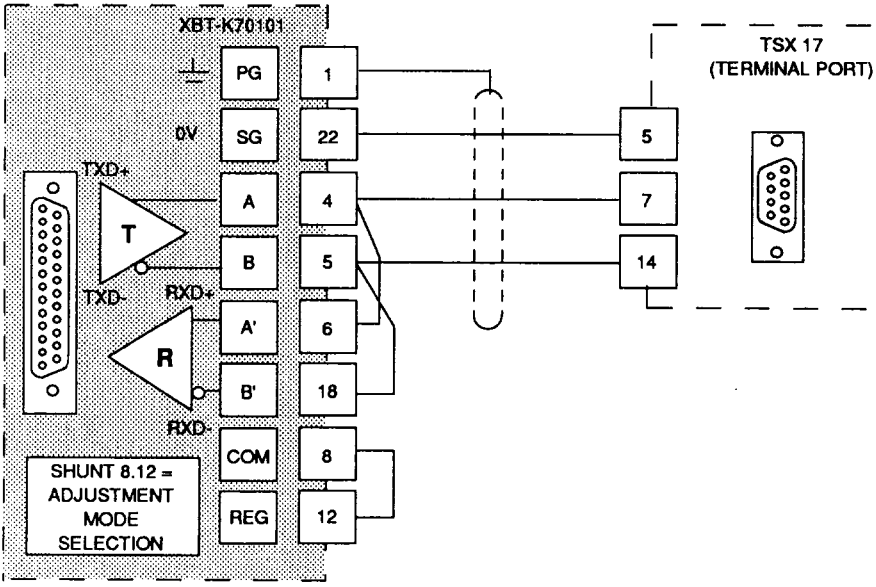


9.3 Connections for TSX 17-20 (ADJUSTMENT MODE)

The XBT-K (version 1.3) is connected to the terminal port on the TSX 17 using the 2.5m cable type XBT-Z917.

THE XBT-K OPERATES IN ADJUSTMENT MODE USING RS 485 (2 WIRE COMMUNICATION) HALF DUPLEX EXCHANGE

• Pin connections for connecting XBT-Z917

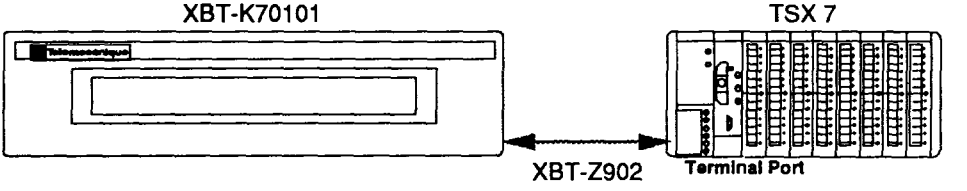


9.4 Connections for TSX 27/47/67/87 (ADJUSTMENT MODE)

The XBT-K is connected to the programming port of the TSX 27/47/67/87 PLC using the 2.5m cable type XBT-Z902.

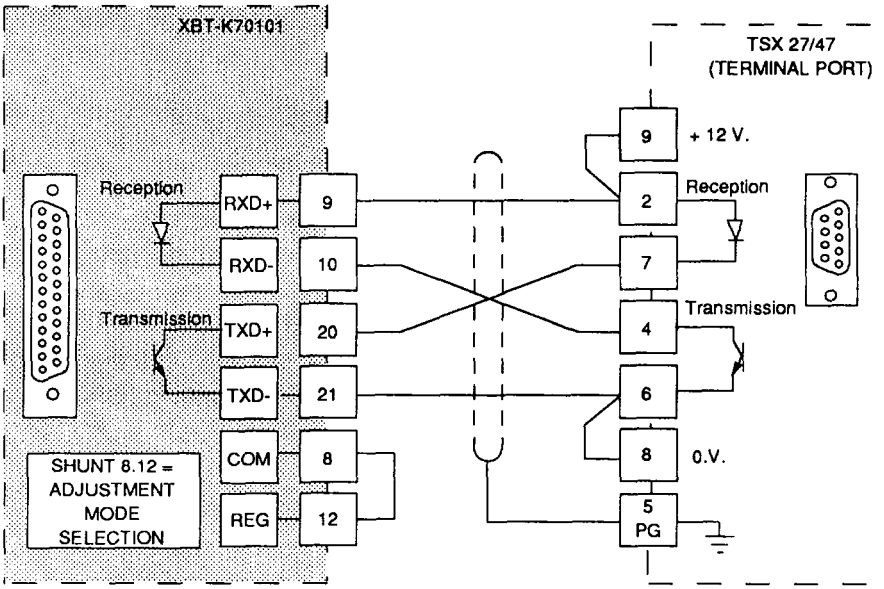
THE XBT OPERATES IN ADJUSTMENT MODE USING 20mA CURRENT LOOP

The supply for the current loop is provided by the TSX (ACTIVE).
Current limitation is provided by the XBT-K (PROTECTED PASSIVE).
Note : The terminal port on the TSX 27 and TSX 47100 is not isolated. Because of this, if the distance between the 'XBT-K and the TSX 27/47 is greater than 3 metres, it is necessary to use the isolating device XBT-Z9011/12 between the two devices (see below : Isolating device for the TSX).



Connections for TSX 27-47 (ADJUSTMENT MODE)

• **Pin connections for the cable XBT-Z902**



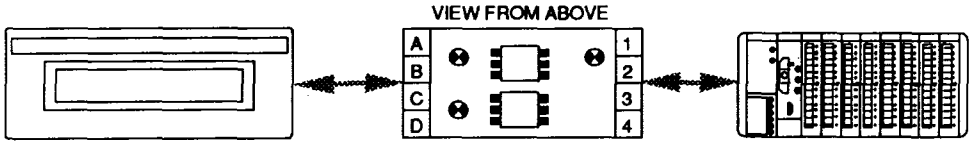
Connections for TSX 27-47 (ADJUSTMENT MODE)

- **Isolating device for the TSX 27 and TSX 47100**

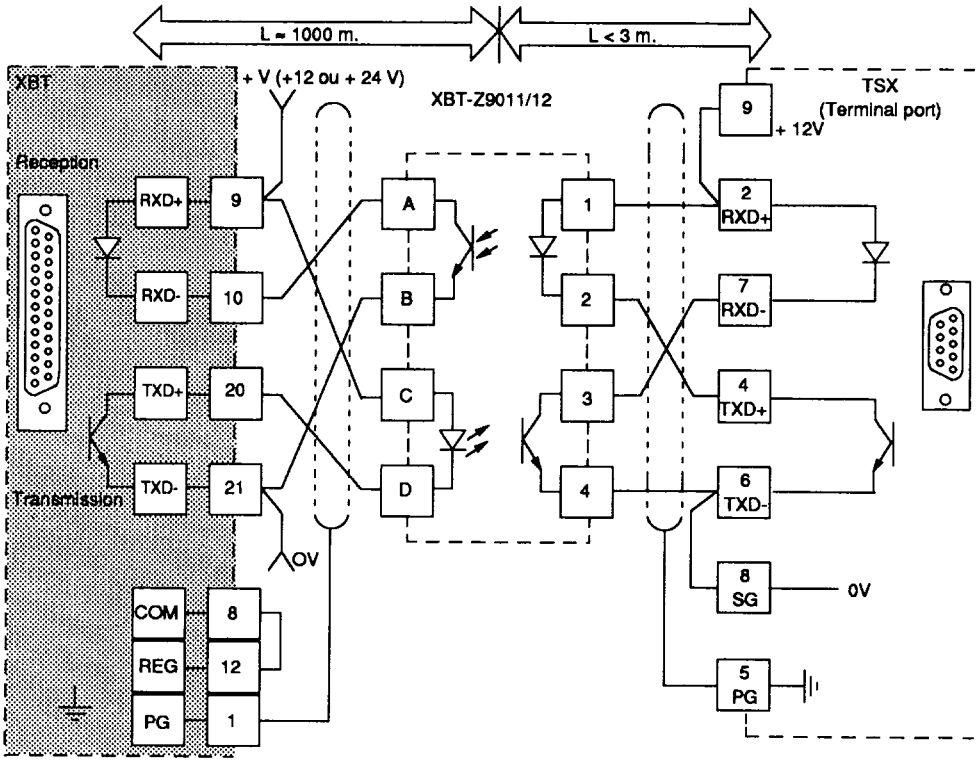
If the distance between the XBT-K70101 display and the TSX 7 is ≥ 3 metres, the XBT-Z9011/12 isolation module should be used. The distance between TSX and XBT-Z90- - must be less than 5 metres (two shielded, twisted pairs with minimum section : 0.34 mm^2 AWG 22).

The distance between XBT-Z9011/12 and XBT-K can be up to 1500 metres (two shielded, twisted pairs with minimum section : 0.34 mm^2 AWG 22).

THE TRANSMISSION SPEED SHOULD BE ADJUSTED ACCORDING TO PRODUCT OPERATING CONDITIONS

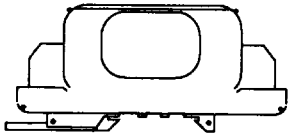


Connections for TSX 27-47 (ADJUSTMENT MODE)



Mechanical characteristics :

- XBT-Z9011 : mounting on symetric rail
- XBT-Z9012 : mounting on asymetric rail



Dimensions:

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

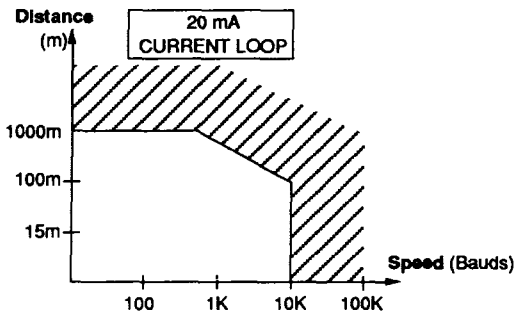
Indication of transmission / reception by light emmiting diodes (LEDs).

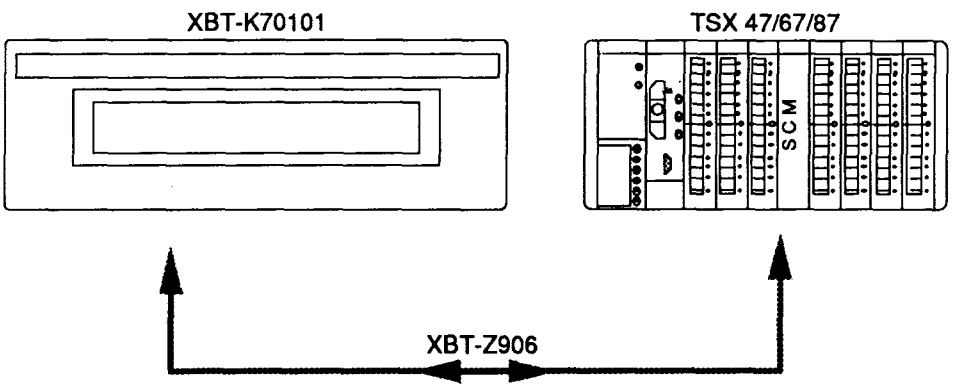
9.5 Connections for the asynchronous module (ASCII MODE)

9.5.1 Current loop connections

THE XBT OPERATES IN ADJUSTMENT MODE WITH 20 mA CURRENT LOOP

The supply for the current loop is provided by the module (ACTIVE).
Current limitation is provided by the XBT-K (PROTECTED PASSIVE).
The maximum distance of the link is 1200 metres (two shielded, twisted pairs with minimum section 0.34 mm^2 AWG22).
For TSX 7 PLCs, connection should be made to the SCM20 module using a 2.5 metre cable type XBT-Z906.

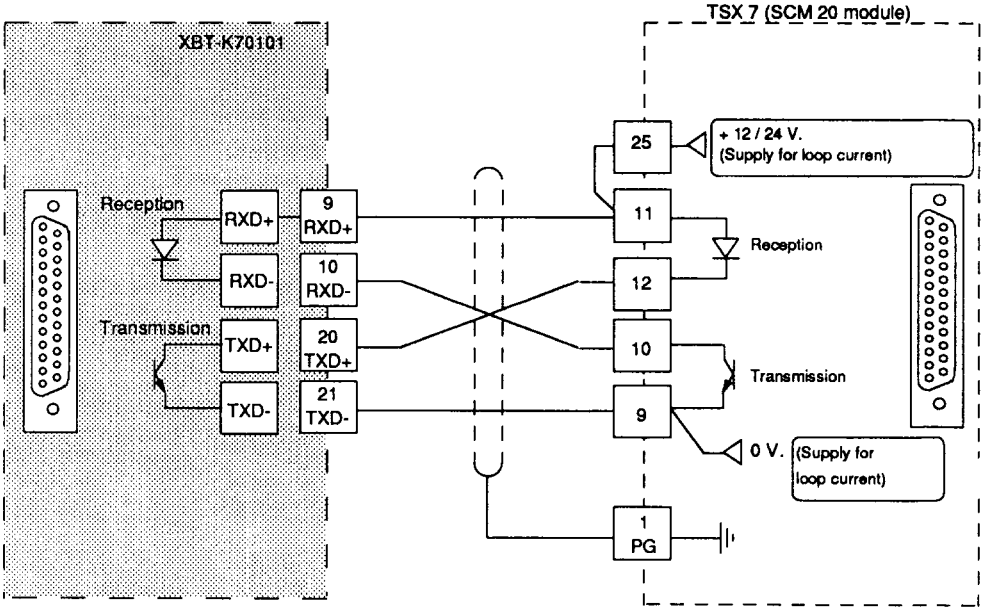




Connecting the XBT-Z906 cable: end with the reference to the XBT-K

Connections for the asynchronous module (ASCII MODE)

Pin connections for connecting cable XBT-Z906

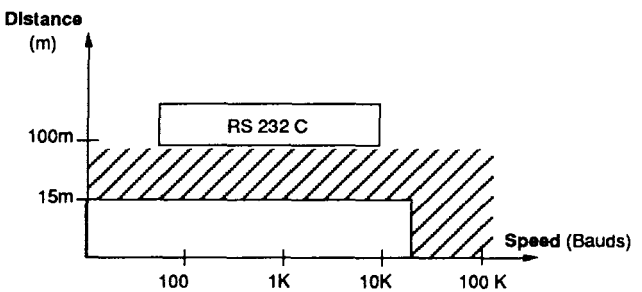


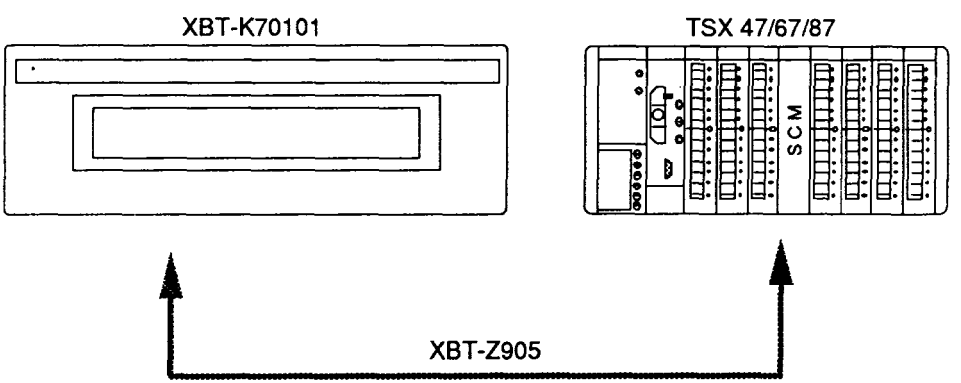
Connections for the asynchronous module (ASCII MODE)

9.5.2 RS 232 C Connections

THE XBT OPERATES IN ASCII MODE

The maximum distance of the link is 15 metres.
Connection : shielded, 3 wire, minimum section 0.34 mm^2 AWG 22.
For TSX 7 PLCs, connection should be made to the SCM20 module using cable XBT-Z905.

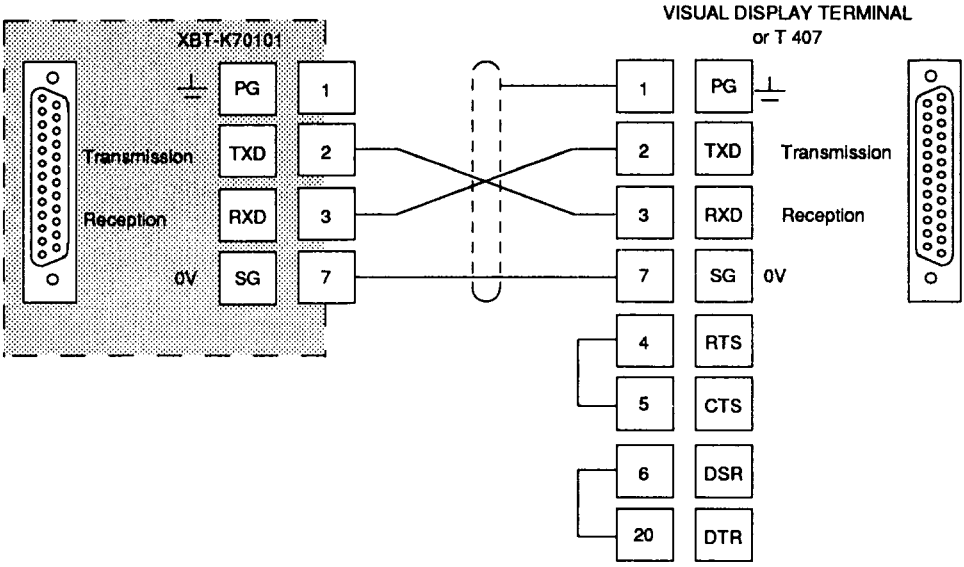




When connecting the XBT-Z905 cable: end with the reference to the XBT-K

Connections for the asynchronous module (ASCII MODE)

Pin connections for cable XBT-Z905



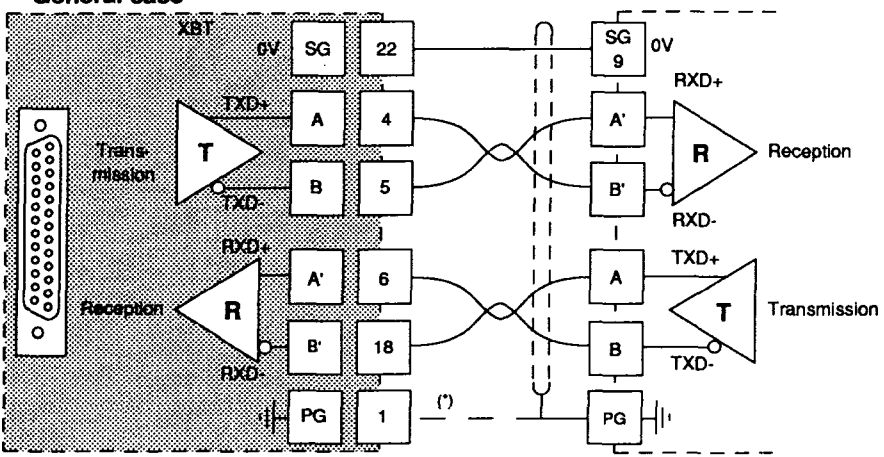
Connections for asynchronous module (ASCII MODE)

9.5.3 RS 422 connections

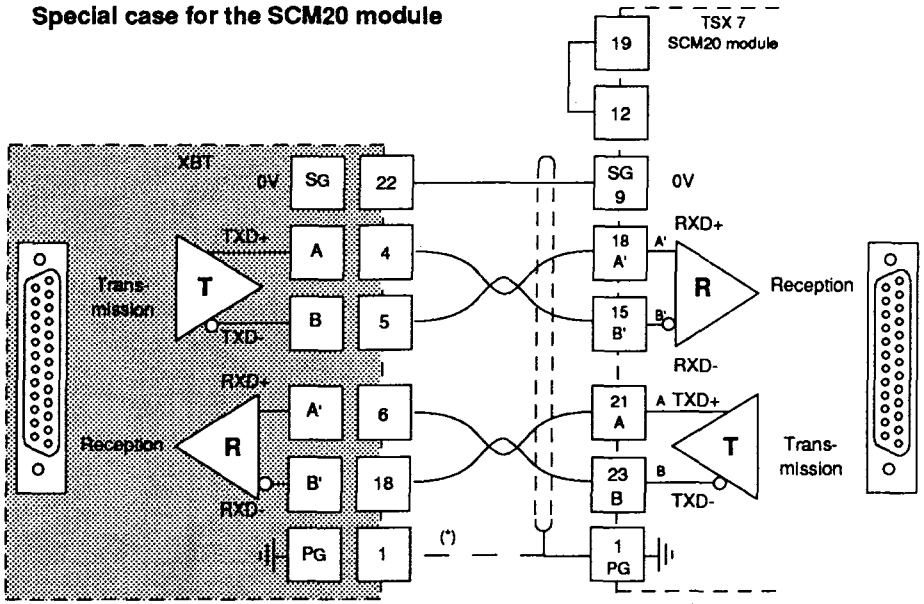
Connection: two shielded, twisted pairs with minimum section 0,34 mm ^{2} (AWG 22).

Examples of connection

General case



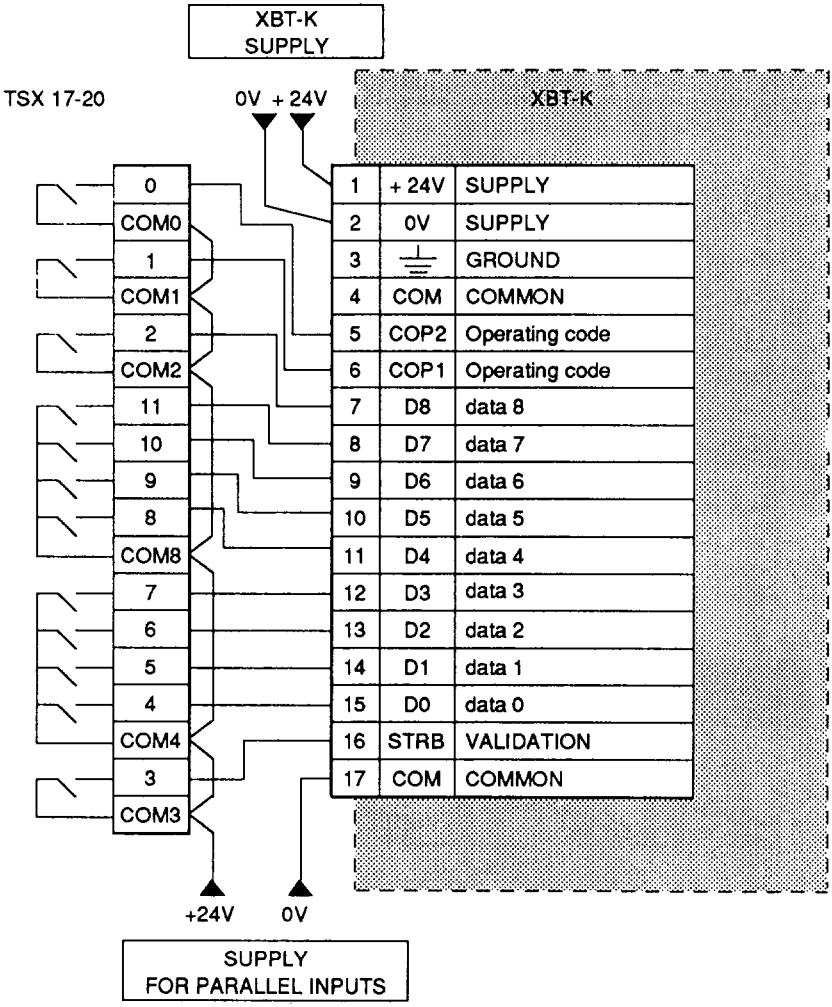
Special case for the SCM20 module



* The connection of the shielding at each end of the cable depends on the electrical constraints of the installation.

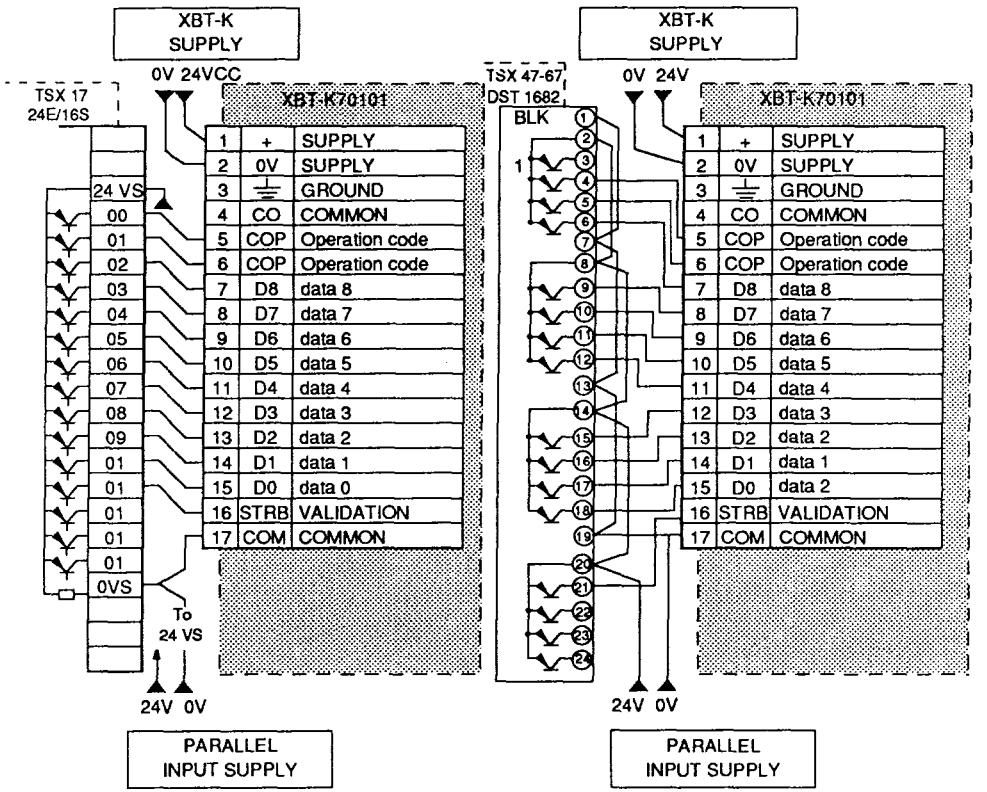
9.6 Connecting to contact inputs

Example of connections to TSX 17-20 (34 I/O relay)



USING THE XBT-K 24 V DC SUPPLY TO CONTROL THE PARALLEL INPUTS CANCELS THEIR ISOLATION

9.7 Connecting to static inputs



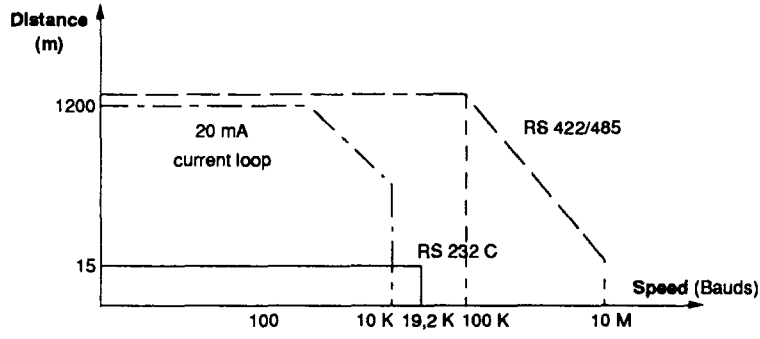
USING THE XBT-K 24 VOLT DC SUPPLY TO CONTROL THE PARALLEL INPUTS CANCELS THEIR ISOLATION.

9.8 Printer connections

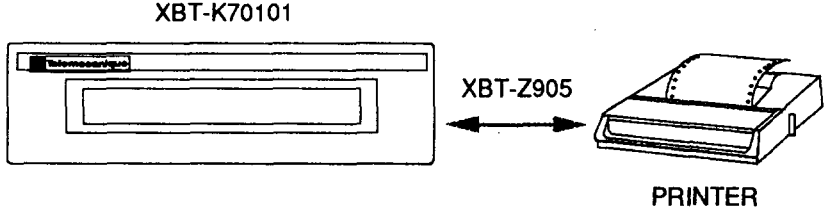
The XBT-K display enables a printer to be used on the serial connector, provided the commands are transmitted via the parallel link.

To adjust the transmission parameters on the XBT-K, refer to chapter 6.5 : SERIAL OPERATION.
Depending on the distance, the transmission can be made with RS 232 C / 20 mA current loop / RS 422.

Choice of type of link



Example of connecting with RS 232 C.



Connecting the XBT-Z905 cable : end with the reference to the XBT-K

Pin connections for the XBT-Z905 cable : see chapter 9.2.

9.9 Serial and parallel multidrop connection

9.9.1 Current loop serial multidrop

The XBT-K displays operate in CURRENT LOOP ASCII MODE.

Supply for the line is provided by the asynchronous module (ACTIVE).

All the XBT-Ks must be connected in serial mode.

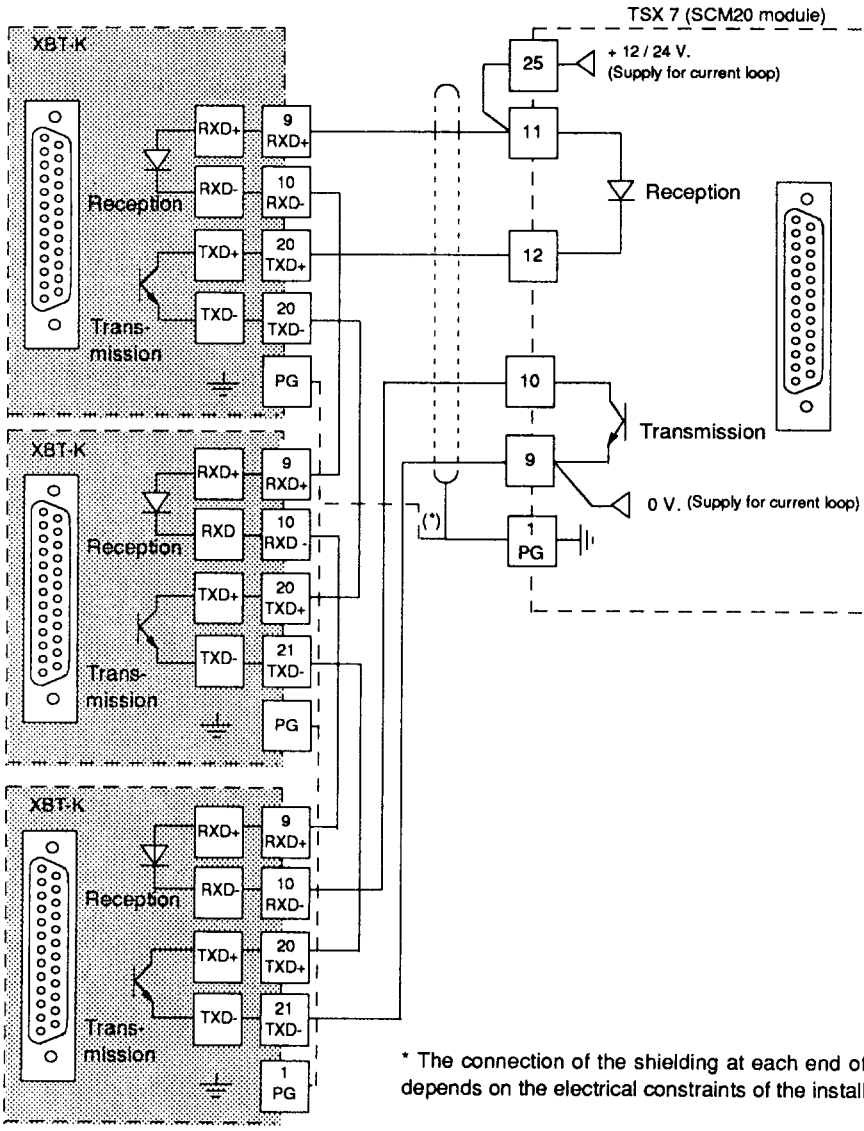
Current limitation is provided by the XBT-K (PROTECTIVE PASSIVE).

Supply voltage for the multidrop loop : V min = 4 V x n (n = number of terminals connected).

The XBT-K terminals must be addressed (coded) by wiring in the serial connector. Refer to chapter 6.8 : OPERATING IN ASCII MULTIDROP MODE for definition of the addresses.

Serial and parallel multidrop connection

Example of connecting to TSX 7 using an SCM20 asynchronous module



* The connection of the shielding at each end of the cable depends on the electrical constraints of the installation.

Serial and parallel multidrop connection

9.9.2 RS 422 parallel multidrop

RS 422 is used for making the connections.

- All SLAVE receivers are cabled in parallel to the MASTER transmitter.

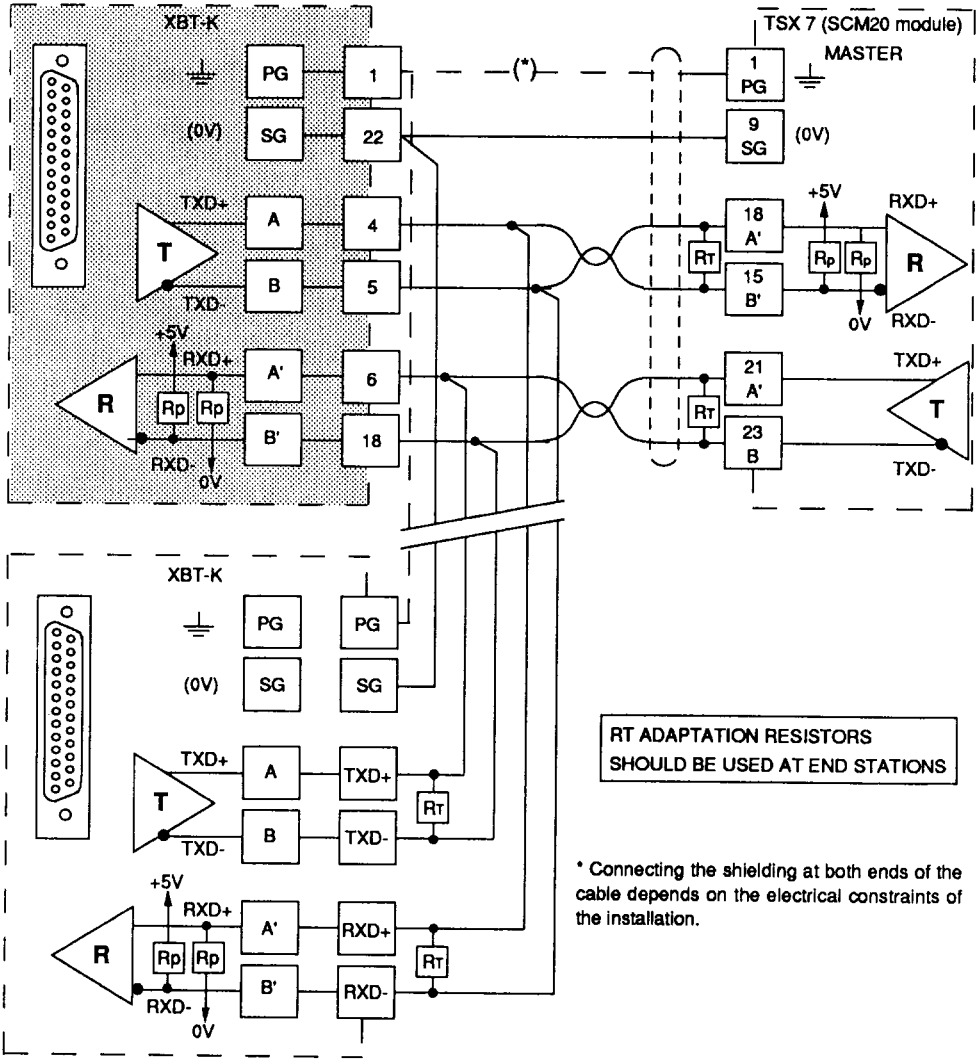
- All SLAVE transmitters are cabled in parallel to the MASTER receiver.

The number of SLAVE terminals is limited to ten devices.
The address of each terminal should be wired in its SUB D connector.

Refer to chapter 6.8 : MULTIDROP OPERATION IN ASCII MODE for definition of the addresses.

Serial and parallel multidrop connection

Example of connecting to TSX 7 using an SCM20 asynchronous module



EQUIPPING ALL THE SLAVE RECEIVERS WITH POLARISATION RESISTORS Rp (4.7 KΩ 1/4 W) IS ADVISED

RT: LIne adaptation resistors (typically 110 Ω 1/4 W)

Serial and parallel multidrop connection

The lengths of the drop links should not exceed ten metres. The maximum length of the total line should not exceed 1200 metres.

Refer to installation manual : TSX SCM serial communication module (reference TSX D41724).

TELEMECANIQUE WILL NOT BE HELD RESPONSIBLE FOR ANY MALFUNCTION

Note : Operation using RS 485 is possible by looping the receiver to the transmitter (connect A, A' and B, B') of all the XBT-K terminals and of the master logic two wire link. All the devices connected to RS 485 must operate in HALF DUPLEX.

The number is limited to a maximum of fifteen by address coding.

Refer to chapter 6.8 : MULTIDROP OPERATION IN ASCII MODE for definition of the addresses.