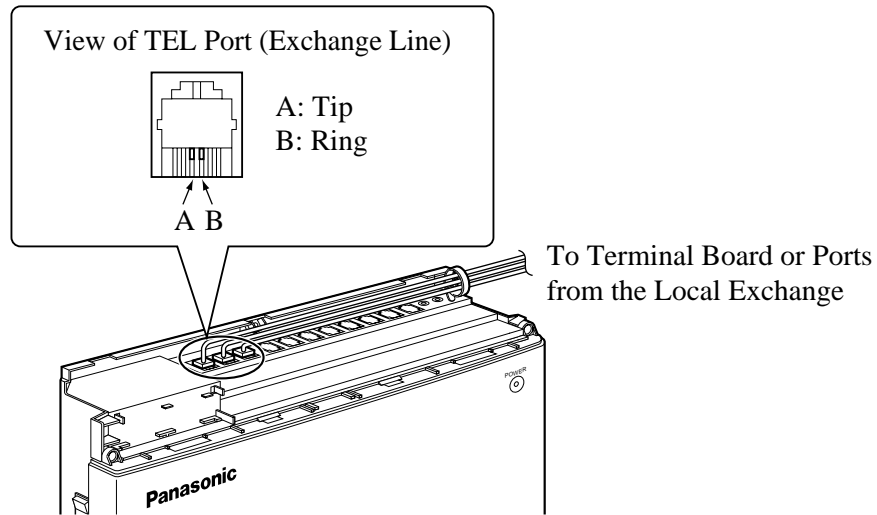


2.7 Exchange Line Connection

Connection

1. Insert the modular plugs of the telephone line cords (2-conductor wiring) into the ports (CO 1 through 3) on the system.
2. Connect the line cords to the terminal board or the ports from the Local Exchange.



- ! • Exchange Line ports are at TNV.

Installing Lightning Protectors

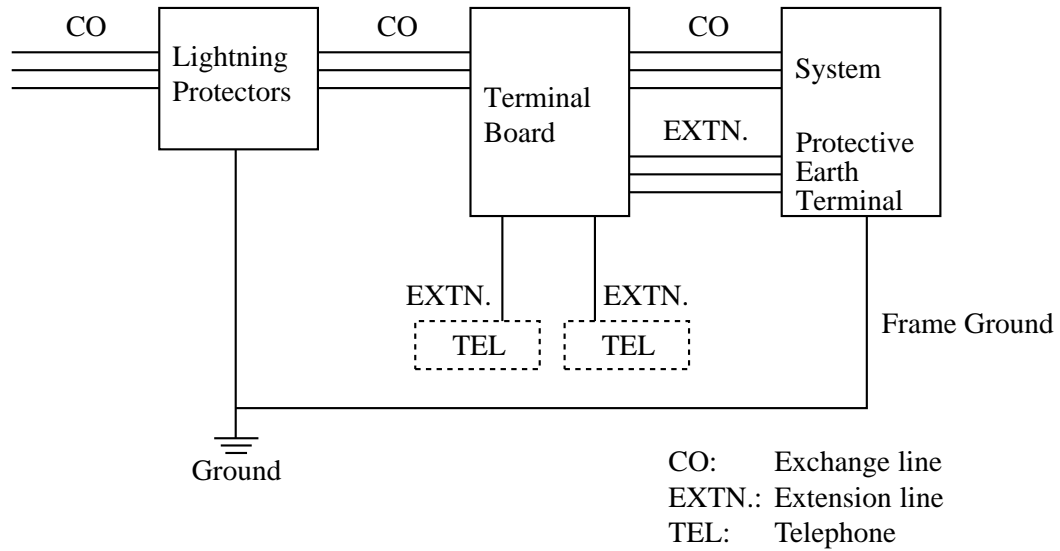
A lightning protector is a device to be installed on an exchange line to prevent a dangerous surge from entering the building and damaging the equipment.

A dangerous surge can occur if a telephone line comes in contact with a power line. Problems due to lightning surges have been steadily increasing with the development of electronic equipment.

In many countries, there are regulations requiring the installation of a lightning protector. A lightning strike to a telephone cable which is 10 m above ground can be as high as 200 000 V. This system should be installed with lightning protectors. In addition, grounding (connection to earth ground) is very important to protect the system (☞ 2.5, Frame Ground Connection).

2.7 Exchange Line Connection

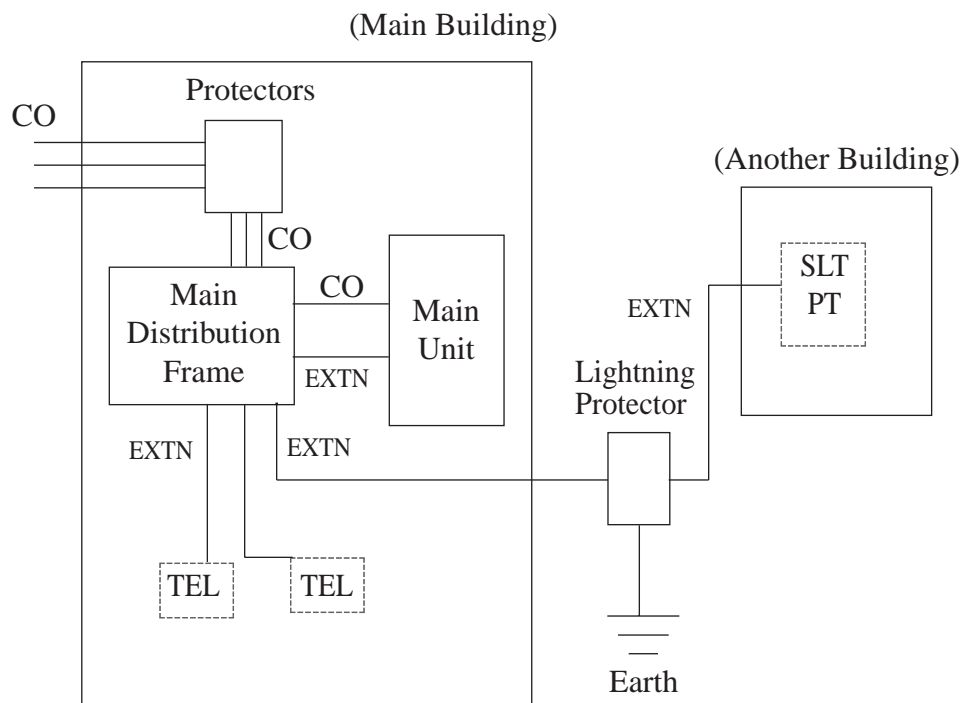
Installation



Outside Installation

If you install an extension outside of the main building, the following precautions are recommended:

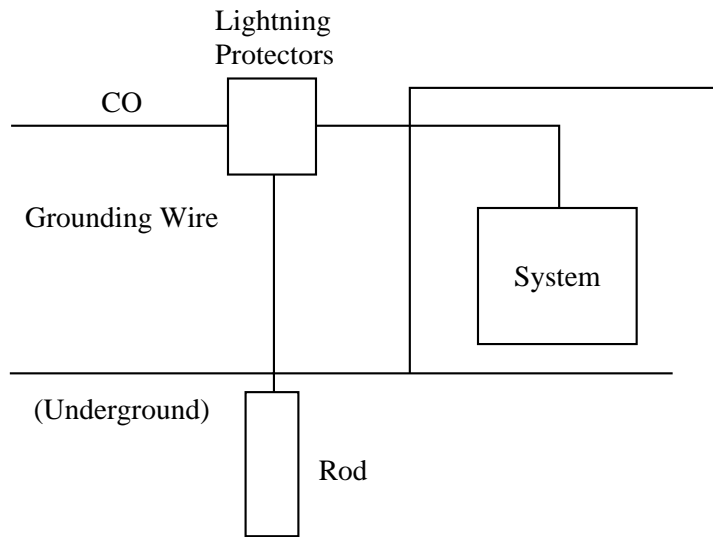
- (1) Install the extension wire underground.
- (2) Use a conduit to protect the wire.



Note • The lightning protector for an extension is different from that for CO.

2.7 Exchange Line Connection

Installation of an Earth Rod



- 1) Installation location of the earth rod Near the protector
- 2) Check obstructions None
- 3) Composition of the earth rod Metal
- 4) Depth of the earth rod More than 50 cm
- 5) Size of the grounding wire Thickness more than $\varnothing 1.6$ mm

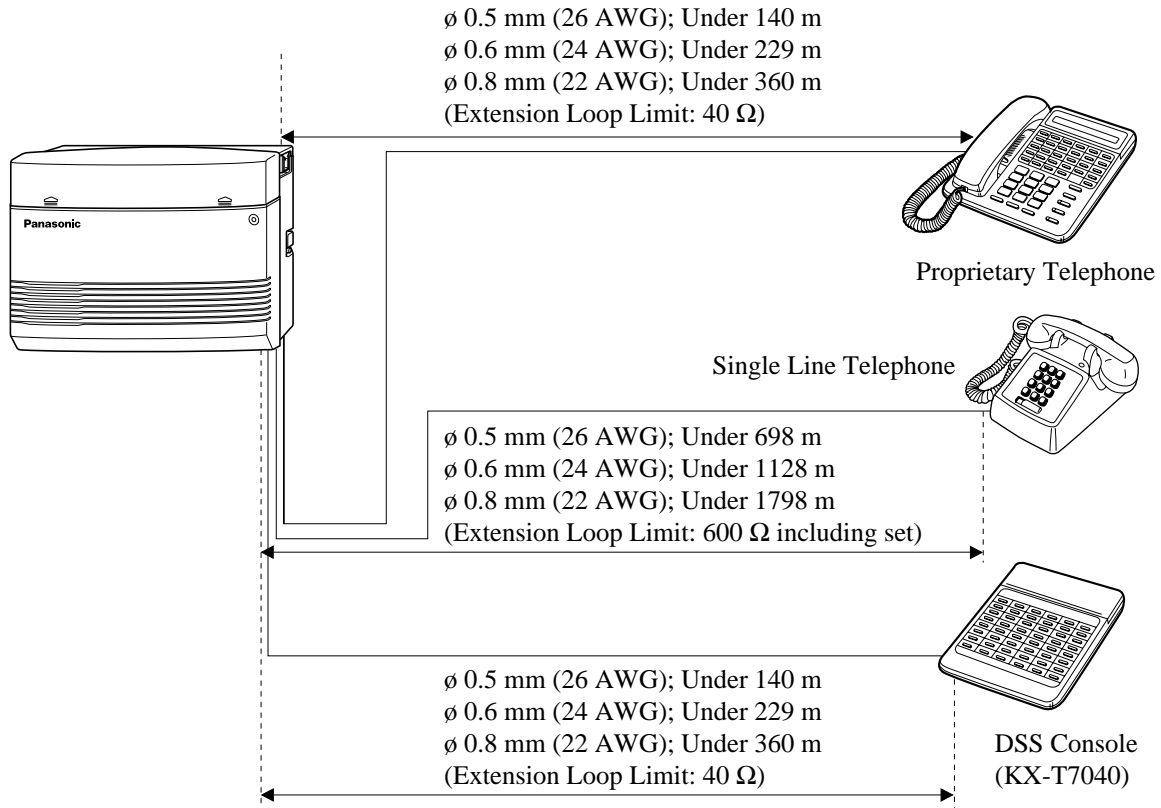
Note • The above example is only a recommendation.
• The length of the earth rod and required depth depend on the composition of the soil.

2.8 Extension Connection

Extension ports 01 through 08 can be used for all kinds of telephones.

Telephone Wiring

The maximum length of the extension line cord (twisted cable) which connects the system and the extension is as follows.



2 or 4-conductor wiring is required for each extension as listed below. There are 4 pins possible for connection: "T" (Tip), "R" (Ring), "L" (Low) and "H" (High).

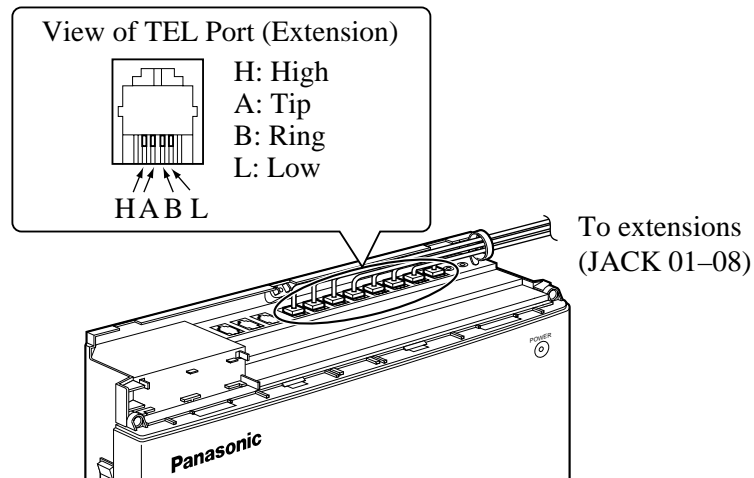
Telephone	Wiring
Single line telephones	1 pair wire (A,B)
Proprietary telephone (e.g., KX-T7130)	2 pair wire (L, H, A, B)

- !** If a telephone or answering machine with an A-A1 relay is connected to the system, set the A-A1 relay switch on the telephone or answering machine to the OFF position.
- Extension ports are at TNV.

2.8 Extension Connection

Connection

Insert the modular plugs of the telephone line cords (2 or 4-conductor wiring) into the ports (JACK 01 through 08) on the system.



- ! • System extensions must be located within the same building as the KX-TA624.

2.9 External Pager (Paging Equipment) Connection

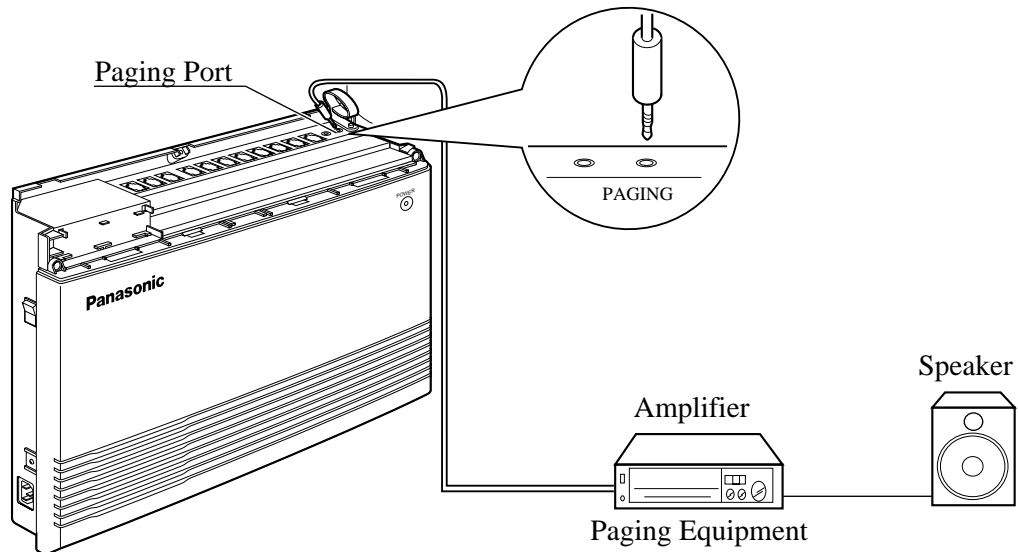
One external pager (user-supplied) can be connected to the system as illustrated below.

Use an EIAJ RC-6701 A plug (2-conductor, ϕ 3.5 mm in diameter).

- Output impedance: 600 Ω

Maximum length of the cable

ϕ 0.8 mm – ϕ 1.3 mm: Under 10 m



- To adjust the sound level of the pager, use the volume control on the amplifier.
- Paging port is at SELV.



- **Required System Programming**
Section 4.2, System Programming
[106] External Paging Access Tone
- **Feature Reference**
Section 3, Features
Paging

2.10 External Music Connection

One music source, such as a radio (user-supplied), can be connected to the system as illustrated below.

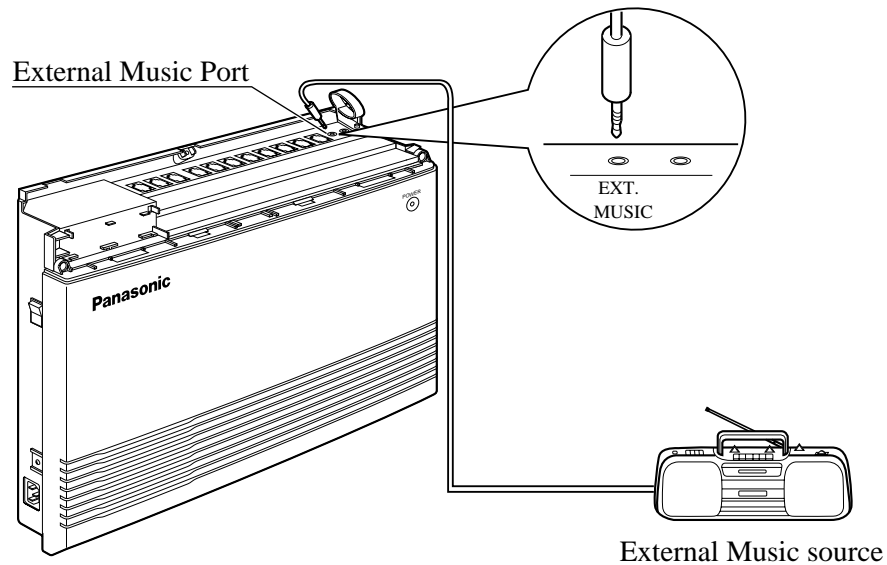
Insert the plug to the earphone/headphone port on the external music source.

Use an EIAJ RC-6701 A plug (2-conductor, ϕ 3.5 mm in diameter).

- Input impedance: 8 Ω

Maximum length of the cable

ϕ 0.8 mm – ϕ 1.3 mm: Under 10 m



- System programming for the music sources used for Music on Hold and Background Music (BGM) is required.
- To adjust the sound level of the Music on Hold, use the volume control on the external music source.
- External Music port is at SELV.

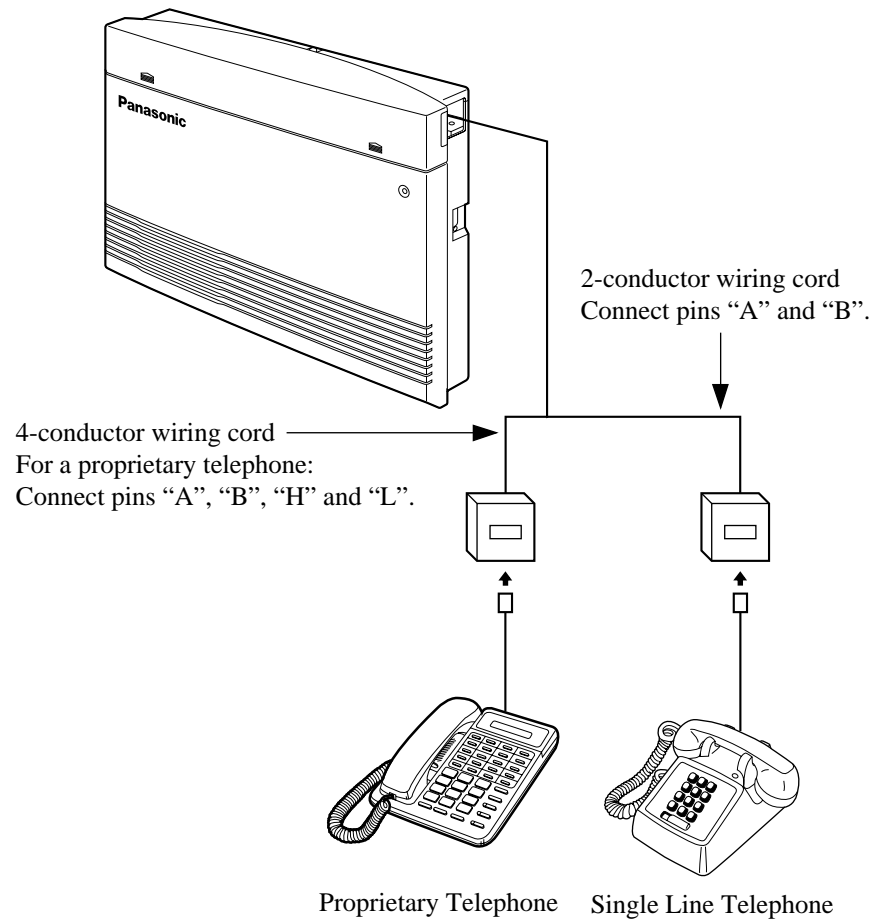


- **Required System Programming**
Section 4.2, System Programming
[111] Hold Music Selection
- **Feature Reference**
Section 3, Features
Music on Hold / Background Music (BGM)

2.11 *Paralleled Telephone Connection*

Any single line telephone can be connected in parallel with a proprietary telephone as follows.

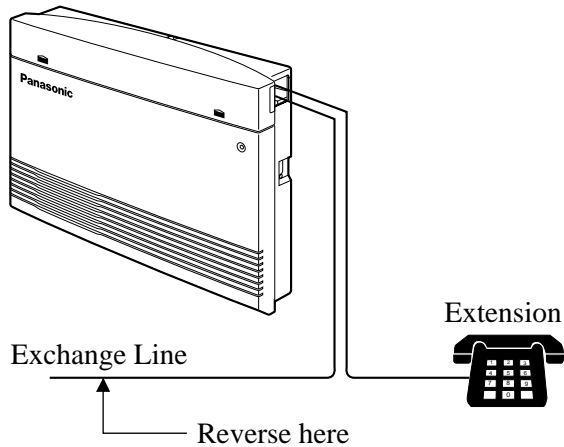
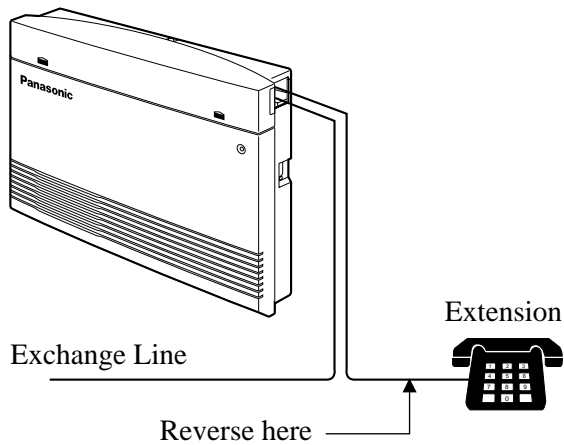
Using a Modular T-Adaptor



- **Required System Programming**
Section 4.2, System Programming
[610] Paralleled Telephone Connection
- **Feature Reference**
Section 3, Features
Paralleled Telephone Connection

2.12 *Polarity Sensitive Telephone Connection*

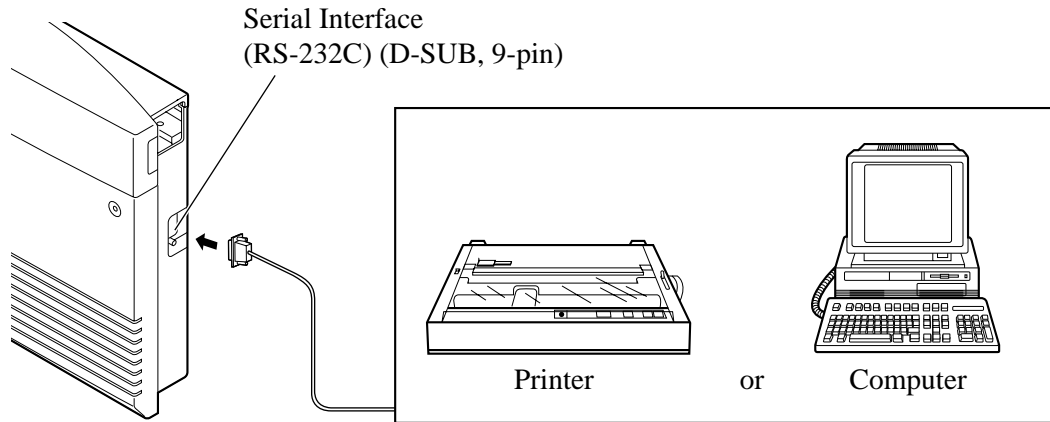
If your telephone is polarity sensitive, follow the procedure below:



1. Complete all the required extension wiring.
2. Confirm that dialling can be done from all the extensions using a touch-tone telephone.
If dialling fails, the polarity between the extension and the system must be reversed.
3. Reverse as shown.
4. Unplug the system.
5. Connect all exchange lines.
6. Confirm that dialling can be done on the following extension using a touch-tone telephone.
Extension (A, B) of port 01: Exchange line 1
If dialling fails, the polarity between the system and the exchange line must be reversed.
7. Reverse as shown.
8. Every time an extension telephone is replaced, repeat the procedure above.

2.13 Printer and PC Connection

A user-supplied printer or personal computer (PC) can be connected to the system. These are used to print out or refer to the SMDR call records and system programming data. Connect the printer cable or the PC cable to the Serial Interface (RS-232C) connector. The cable must be shielded and the maximum length is 2 m.



Arrange the cables so that the printer will be connected to the system as shown in the appropriate chart on the following page.

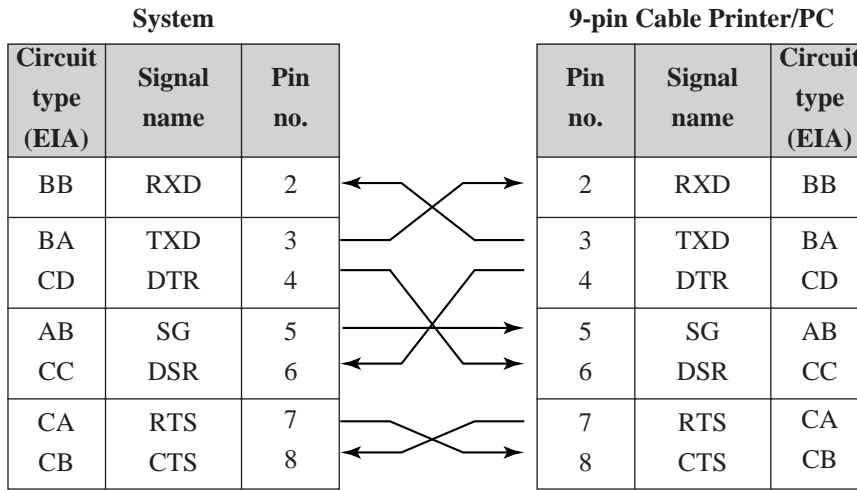
The pin configuration of the Serial Interface (RS-232C) Connector is as follows.

Pin No.	Signal Name		Circuit Type	
			EIA	CCITT
2	RXD	Received Data	BB	104
3	TXD	Transmitted Data	BA	103
4	DTR	Data Terminal Ready	CD	108.2
5	SG	Signal Ground	AB	102
6	DSR	Data Set Ready	CC	107
7	RTS	Request To Send	CA	105
8	CTS	Clear To Send	CB	106

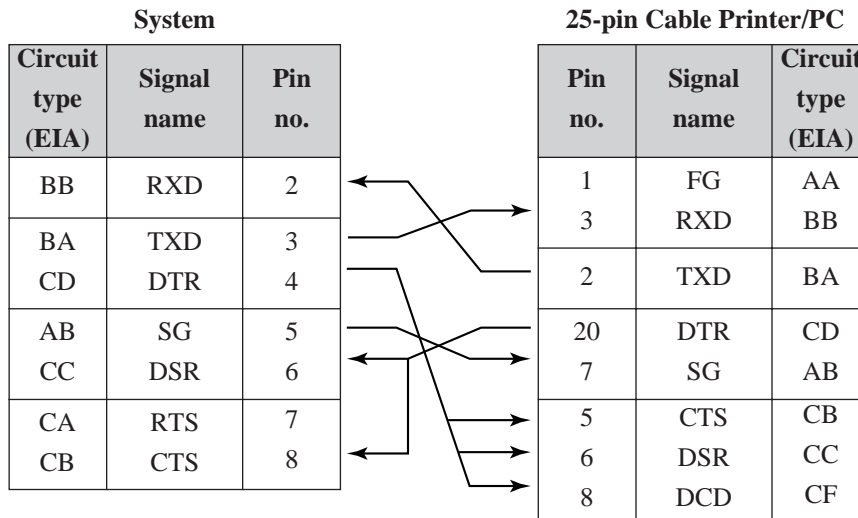
2.13 Printer and PC Connection

Connection Chart for a Printer / Personal Computer with the System

If you connect a printer or a PC with a 9-pin cable, follow the chart below.



If you connect a printer or a PC with a 25-pin cable, follow the chart below.



2.13 *Printer and PC Connection*

Serial Interface (RS-232C) Signals

Frame Ground: FG

Connects the unit frame and the earth ground conductor of the AC power cord.

Transmitted Data: SD (TXD) (output)

Conveys signals from the unit to the printer. A “Mark” condition is held unless data or BREAK signals are being transmitted.

Received Data: RD (RXD) (input)

Conveys signals from the printer.

Request to Send: RS (RTS) (output)

This lead remains ON whenever DR (DSR) is ON.

Clear To Send: CS (CTS) (input)

When the CS (CTS) circuit is ON, it indicates that the printer is ready to receive data from the unit. The unit does not attempt to transfer data or receive data when the CS (CTS) circuit is OFF.

Data Set Ready: DR (DSR) (input)

When the DR (DSR) circuit is ON, it indicates the printer is ready. The DR (DSR) circuit being ON does not indicate that communication has been established with the printer.

Signal Ground: SG

Connects the DC ground of the unit for all interface signals.

Data Terminal Ready: ER (DTR) (output)

This signal line is turned ON by the unit to indicate that it is ON LINE. The ER (DTR) circuit being ON does not indicate that communication has been established with the printer. It is switched OFF when the unit is OFF LINE.

Data Carrier Detect: CD (DCD) (input)

When ON, it indicates the data terminal (DTE) that the carrier signal is being received.



- **Required System Programming**

- Section 4.2, System Programming

- [800] SMDR RS-232C Communication Parameters

- [801] SMDR Parameter

- **Feature Reference**

- Section 3, Features

- Station Message Detail Recording (SMDR)

2.18 *Auxiliary Connection for Power Failure Transfer*

Power failure transfer connects a specific single line telephone (SLT) to selected exchange lines in the event of system power failure, as follows.

Exchange line 1 – extension (T, R) port 01

Exchange line 4 – extension (T, R) port 09

Connection of exchange lines 1 and 4, and the respective extensions require no auxiliary connection.



- In the event of a power failure, system memory is protected by a factory-provided lithium battery. There is no memory loss except the Camp-on, Saved Number Redial, Last Number Redial, Call Park and Message Waiting memories.
- The system automatically changes the current connection to the above connection when the power supply stops.
- Proprietary telephones cannot be used during a power failure. Therefore, we recommend connecting SLTs in parallel with proprietary telephones connected to extension ports 01 and 09.



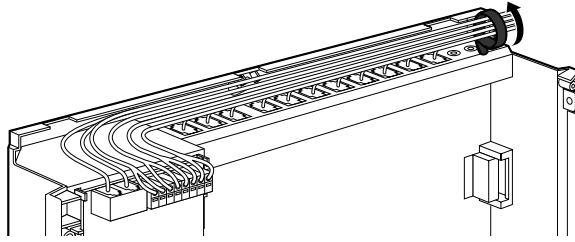
- **Feature References**

- Section 3, Features**

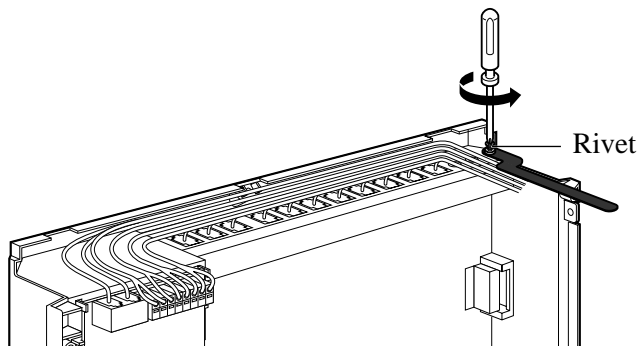
- Power Failure Transfer, Paralleled Telephone Connection

2.19 *Securing the Cords*

1. Wrap the strap around all of the cords.



- To remove the rivet, use a screw driver as shown below.



2.20 *Closing the Front Cover*

1. Replace the covers and tighten the screws.
2. Tie together all of the connected cords and attach them to the wall so that the cords cannot be pulled out of the system.

