

Section 3

Installation

This section contains information necessary to install a 9500 Central Station Receiver.

IMPORTANT:
Do not connect power to the system until you have read these instructions carefully.

3.1 Environmental specifications

- Temperature range is 32° to 120° F.
- Indoor use only.
- 85 percent non-condensing humidity.
- Non-corrosive environment.

3.2 Electrical Specifications

Line Voltage:		120VAC ± 10%	60Hz, 100VA
		240VAC ± 10%	50Hz, 100VA
Fuse:		2.5A Slow Blow	
Backup Battery Connection: Note: A 12 VDC battery does not provide standby time required by UL and NFPA standards. A UPS (listed for Protective Signaling Use) must be utilized when standby power is required. See 5.3.4 for details on backup battery configuration.	Input	10.2 to 14.0 VDC	3 Amp Max.
	Output	13.65 VDC	1 Amp charging current
Auxiliary Relay:		2.5 Amp @ 48VDC	Resistive Power Limited
		2.5 Amp @ 48VAC	Resistive Power Limited

3.3 Overview

The 9500 is assembled at the factory. One line card is shipped with the 9500 receiver. Follow the procedures described in Section 3.4 to install additional line cards.

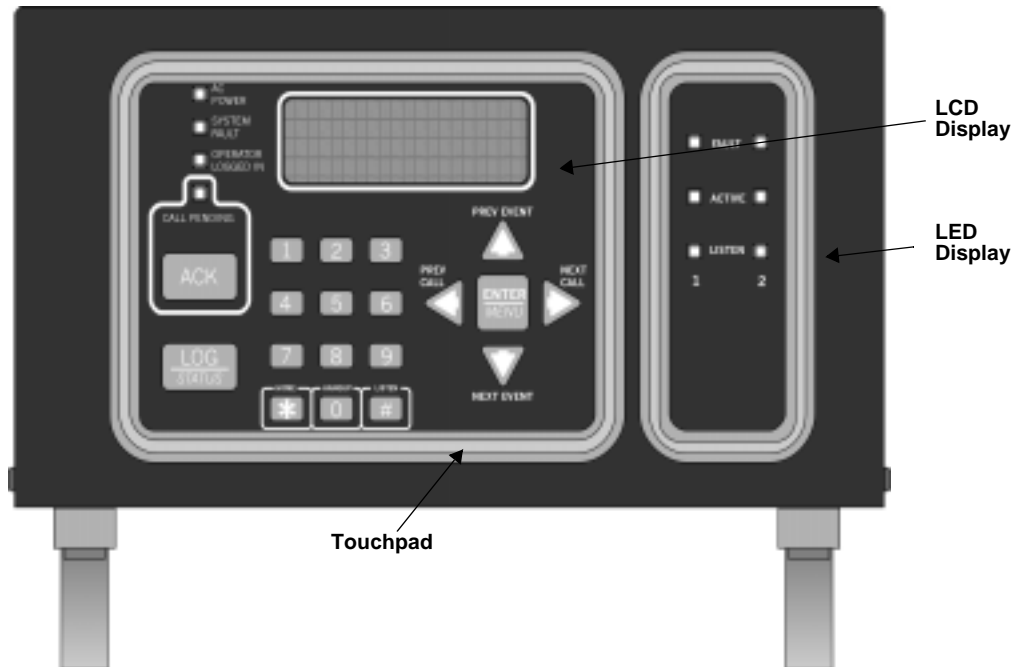


Figure 3-1 Model 9500 Front View

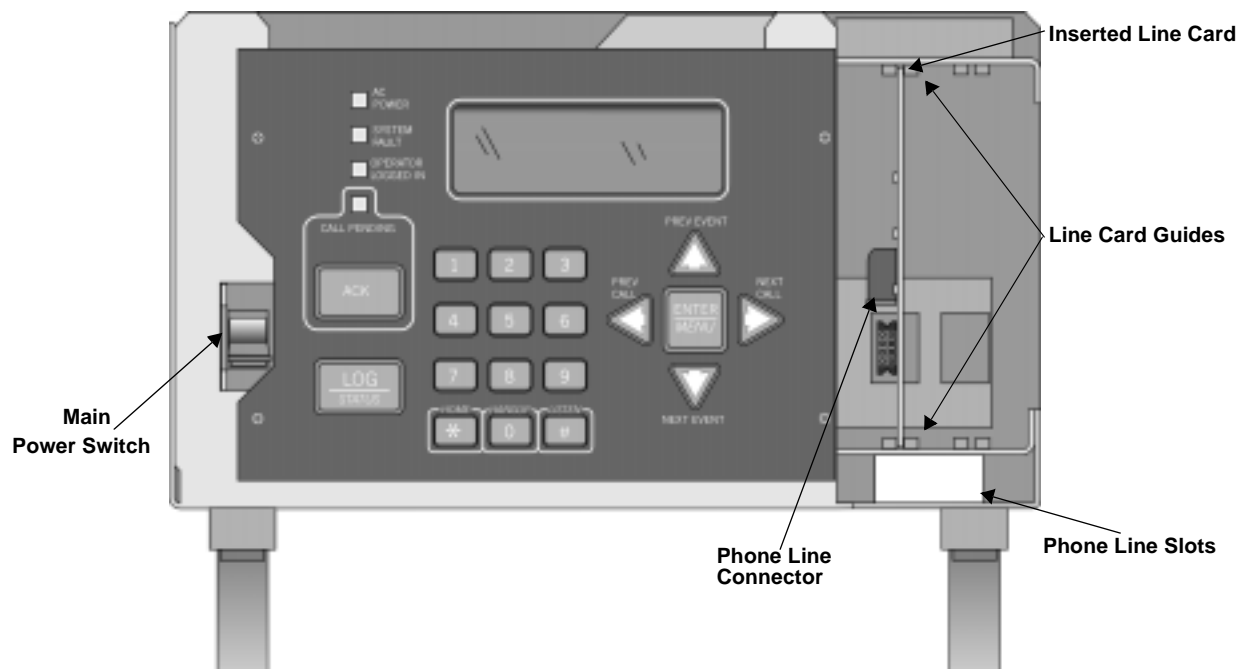


Figure 3-2 Model 9500 Front View Without the Cover On

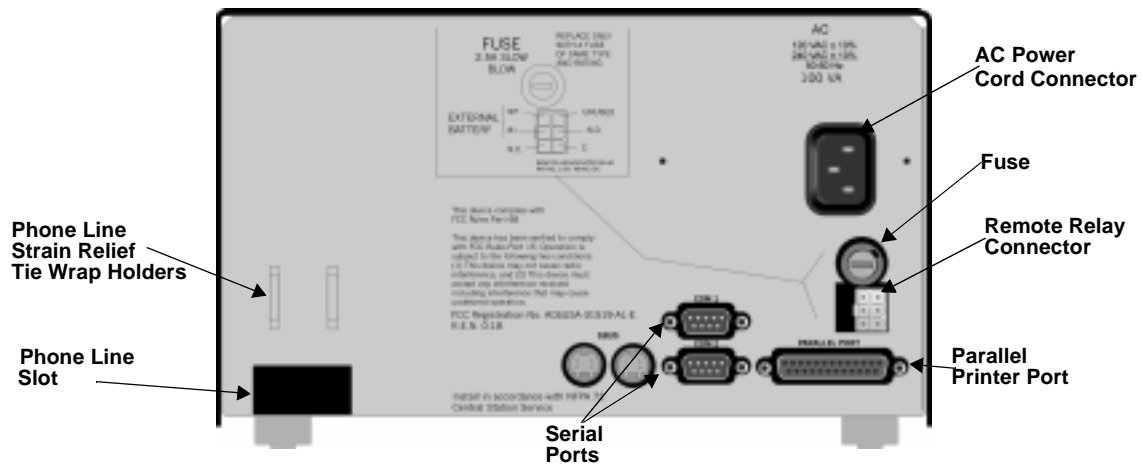


Figure 3-3 Model 9500 Rear View

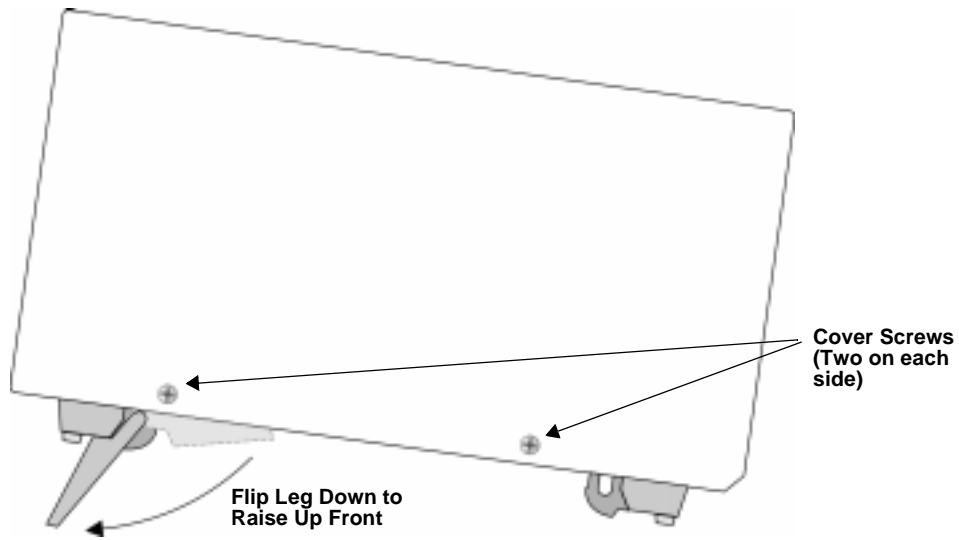


Figure 3-4 Side View

3.4 Line Card Installation

Caution:

To reduce the risk of electrical shock and damage to the receiver, follow these steps in the order they are listed here.

1. Remove the 9500's cover by unscrewing the four cover screws located on both sides of the receiver. (See Figure 3-4 for the cover screw locations.)
2. Turn off the 9500's power switch (see Figure 3-5 for power switch location).
3. When the cover is removed, you will see that there are 2 slots for line cards. The receiver recognizes each slot by number 1 and 2 (slot one is closest to the keypad and display). It is not necessary to put line cards in numbered order because the receiver continually polls each slot to see if existing line cards are functioning and if it is still in its slot. The receiver also looks to see if a new line card has been added. Figure 3-5 shows where each line card should be placed.

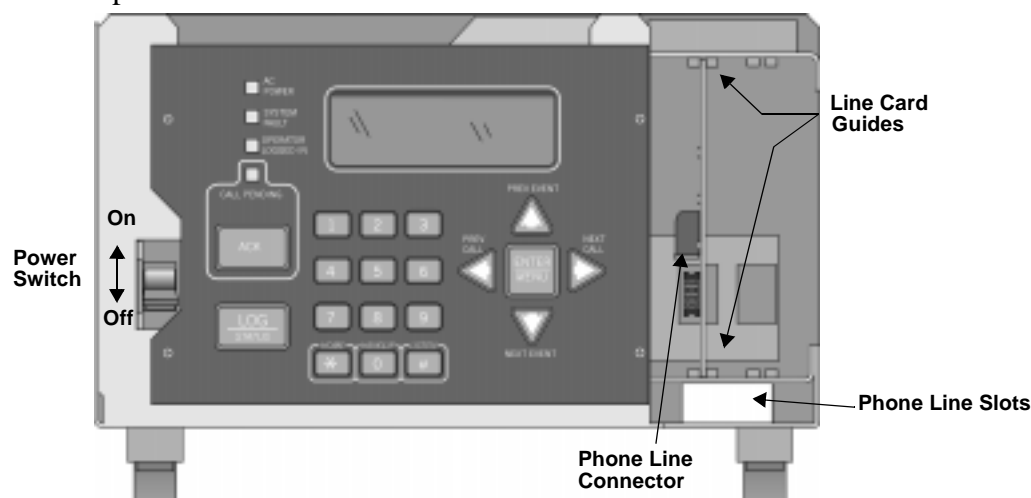


Figure 3-5 Line Card Locations

4. Position the line card as shown in Figure 3-6.

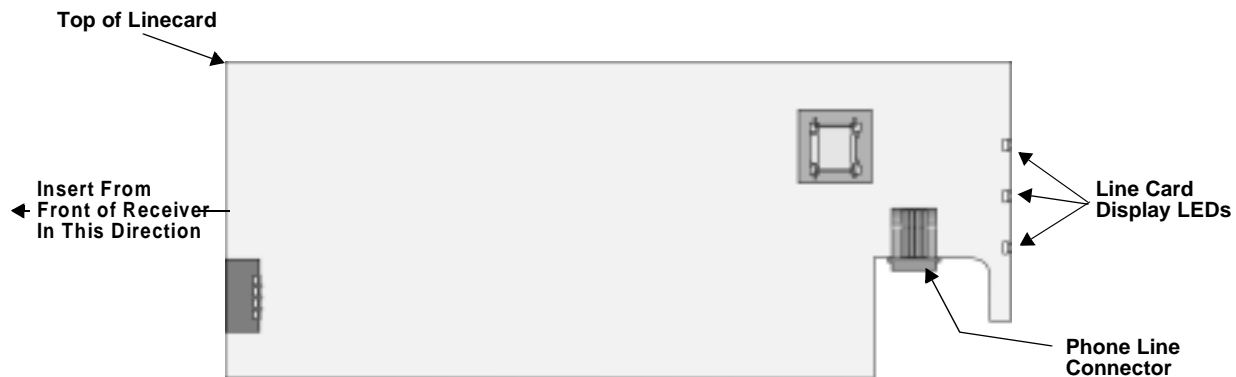


Figure 3-6 Line Card Position and Components

5. Carefully slide the card into its guides (both top and bottom) until it fits into its connector at the back of the receiver. Gently push the card as far into the connector as you can. The card is now in place. See Figure 3-5.
6. Connect telephone line. (See Section 3.6 for telephone line installation.)

Note: Use the tie wrap (P/N 120101 provided with each line card) on the tie wrap holder to add strain relief to the telephone lines. See Figure 3-3.

7. Power up the 9500. See Section 3.8 and 3.9 for AC and battery connections.
8. Replace the 9500's cover and screw in the cover screws to hold the cover in place. If you are simply replacing a line card with another card of the same type and are using the same format settings, your installation is now complete. If not continue to the next step.
9. Enter programming mode to select the appropriate handshake configuration. (Go to Section 5.4 for programming procedure.)

3.5 Removing Line Cards

If you need to remove a card:

1. Remove the 9500's cover by unscrewing the four cover screws located on both the sides of the receiver. (See Figure 3-4 for front plate retaining screw locations.)
2. Turn off the 9500's AC power switch (see Figure 3-2 for power switch location).
With the cover removed you will see that there are 2 slots for line cards.
3. Locate the Line Card that you wish to remove.
4. Unplug the telephone line. (See Figure 3-5 and Figure 3-6.)
5. From the front side of the receiver pull the line card straight back. This will pull the card free from the connector at the rear of the receiver.
6. When the card is free, slide it carefully out of the receiver.

Note: If replacing a line card with a new one see Section 3.4 to install the new line card.

7. Power up the 9500.
8. Replace the 9500's cover and replace the cover screws.
9. Enter programming mode to clear the linecard from the system. (See Section 5.4 for programming procedure.)

3.6 Telephone Line Connection

See Figure 3-3 for the location of the phone line inputs. Connections to the 9810 phone jacks are made with a standard 7-foot phone cord (provided with each line card).

Use the following procedure to connect phone lines to the 9810 line cards:

1. Remove the cover of the 9500 receiver by loosening cover screws. (See Figure 3-4 for cover screws locations.)
2. From the back side of the receiver insert the telephone line through the corresponding slot for the desired line card. (See Figure 3-5 and Figure 3-6 for phone line slot locations.)
3. Gently push it all the way through to the front side of the receiver.
4. Plug the RJ-11 phone connector into the connector on the 9810 line card. (See Figure 3-5 and Figure 3-6.)

Note: Use the tie wrap (P/N 120101 provided with each line card) on the tie wrap holder to add strain relief to the telephone lines. See Figure 3-3.

5. Replace the cover of the 9500 receiver. (See Figure 3-4 for cover screws locations.)

3.7 Parallel Printer Connection

The 9500 Receiver connects to model SK320 printer for UL applications. To connect the SK320 to the 9500 receiver follow these steps:

1. Connect the standard parallel printer cable to the parallel printer port on the back of the 9500 receiver. (See Figure 3-7.)



Figure 3-7 Parallel Printer Cable Connection to 9500

2. Connect the other end to the SK320 parallel printer port.

Note: Make sure that printer power is turned off.

3. Turn the printer power “on”.

3.7.1 Printer Cable Pin-Outs

25 pin printer cables are a standard items at most electronic stores, however, if you create your own cable, use the pin description in Table 3-1.

Table 3-1: External Printer Cable Pin Description

9500 Pin #	Signal	Direction	Description
1	Data Strobe (Low)	Out	A low strobe pulse to read data in the pulse width is greater than 0.5 microseconds.
2	Data Bit 1	Out	These signals represent information of the first to eighth bits of parallel data. Each signal is at high level when the data is logic 1 and low when it is logic 0.
3	Data Bit 2	Out	
4	Data Bit 3	Out	
5	Data Bit 4	Out	
6	Data Bit 5	Out	
7	Data Bit 6	Out	
8	Data Bit 7	Out	
9	Data Bit 8	Out	
10	/AckNlg	In	A low pulse from the printer signals the control that the printer is ready for additional data.
11	Busy	In	A high level indicates that the printer is busy.
12	Paper Empty	In	A high level indicates that the printer is out of paper.
13	Select	In	A low level indicates the printer is offline or in an error condition.
14	Not used	-	-
15	Not used	-	-
16	Logic ground	-	Logic ground for printer
17	Not used	-	-
18 to 25	Logic Ground	-	Ground return for data lines.

3.7.2 Com Ports 1 & 2

Com ports one and two are serial communication ports that (through a null modem cable) can be used to communicate to other serial communication devices. Com port one is the only serial communications port that can be used with the automation computer (see Section 3.10). A standard null modem cable can be used to connect com port 1 or 2 to another serial device such as a printer or a PC. Figure 3-14 and Figure 3-15 shown the pin-outs for a null modem cable. See Section 5.3.3 to configure the Com Port 1 and Com Port 2.

3.7.3 Remote Alert Output

1. Plug the Relay wiring harness onto the connector on the back of the 9500 receiver. (See Figure 3-8.)

Note: The remote alert output is a form C relay with a normally open or a normally closed wire.

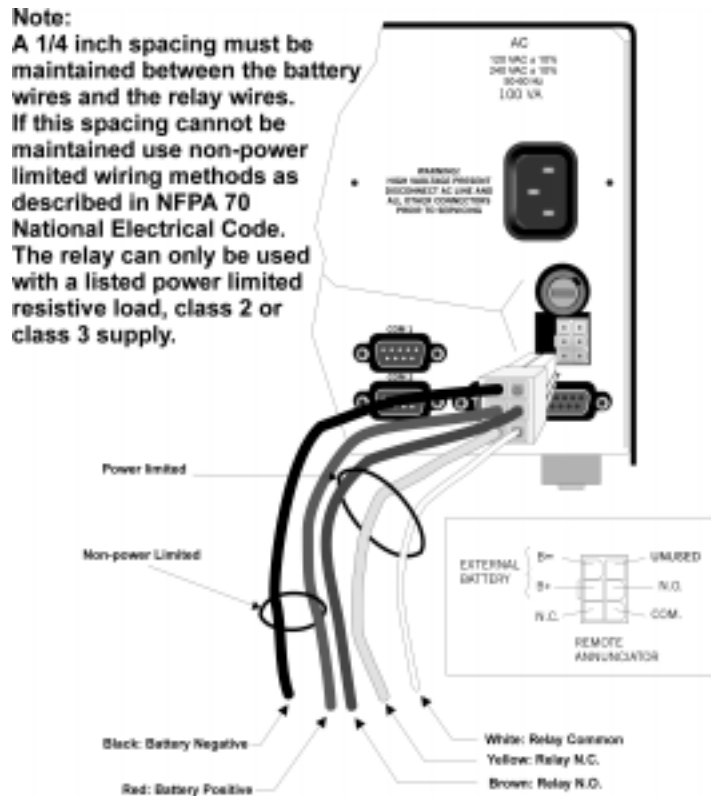


Figure 3-8 9500 Remote Alert Output/External Backup Battery Connection

2. Connect the white wire to common.
 3. Use the Yellow wire for a normally closed circuit
- Or
- Use the Brown wire for a normally open circuit.

3.8 AC Power Cord Connection

3.8.1 Using Standard Power Cord

1. Before the AC power cord is connected, make sure that the power switch is in the OFF (down) position. See Figure 3-2 and Figure 3-10.
2. Connect the appropriate end of the power cord into its receptacle on the back of the 9500.
3. Plug the three-pronged end of the power cord into a 120 VAC 60 Hz outlet (three-prong type only). The outlet should be unswitched, so that power remains on 24 hours a day. The outlet must also be earth grounded. Follow the directions in Section 3.8.4 if you need to measure for proper earth grounding.

3.8.2 Using UL Listed AC Power Connection

To meet UL requirements for Central Station Service, the AC power must be run in conduit into a single gang junction box. Use UL listed Model 9512 Conduit Connector Kit to attach conduit to the receiver.

Table 3-2 lists the items contained in the 9512 Conduit Connector Kit.

Table 3-2: 9512 Conduit Connector Kit

Item	Quantity
Single Gang Electrical Box	1
Receiver Chassis Mounting Screws	2
AC Pigtailed Power Cable	1

Follow these steps to properly connect the AC and the 9512 connector kit:

Note: It may be necessary to have a licensed electrician make the AC connections.

1. Run AC wire in conduit to the receiver.

Warning! *To avoid electrical shock, make sure that AC power on the this circuit is turned off.*

2. Feed AC wire through the conduit opening in the back (or the opening that best fits your conduit configuration) of the single gang electrical box.

3. Connect the AC wire to the Receiver AC pigtailed power cable. See Figure 3-9.

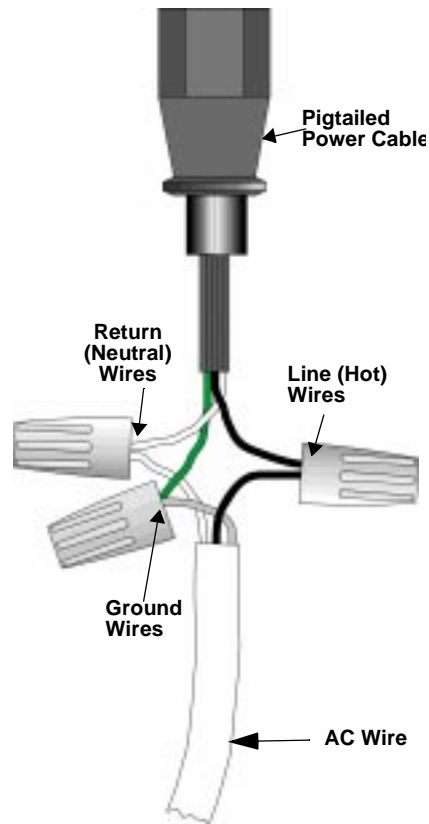
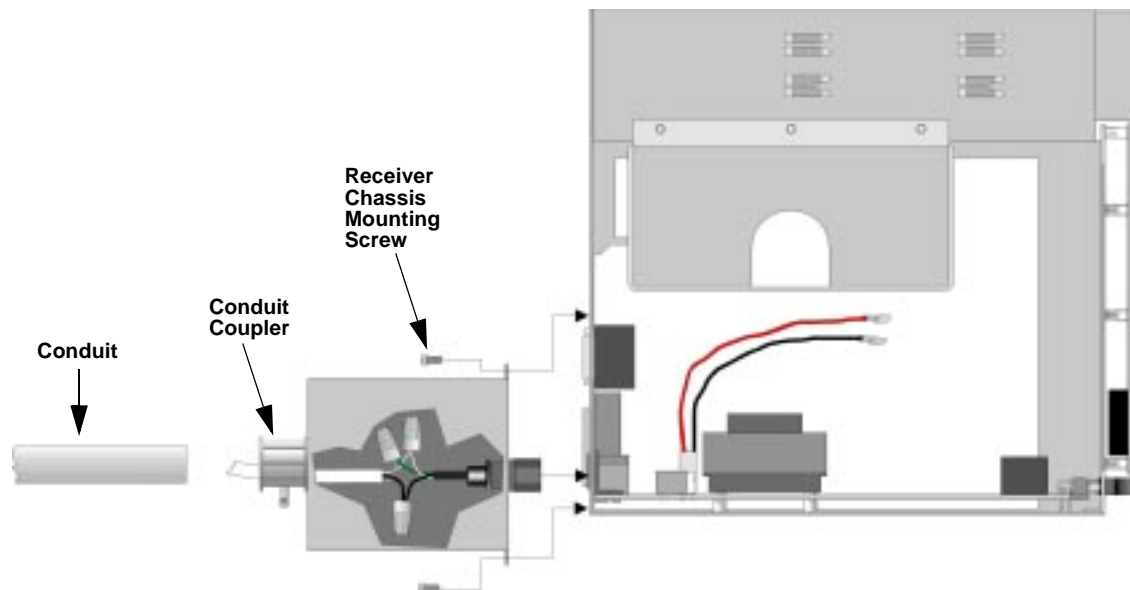


Figure 3-9 AC Wire Connection To Receiver Pigtail

4. Plug the wired pigtail into the AC receptacle on the back of the receiver. See Figure 3-3.
5. Secure the electrical box to the back of the receiver with the two receiver chassis mounting screws.



6. Connect the conduit to the electrical box using the appropriate conduit coupler.
7. Turn on AC power to this circuit.

3.8.3 Switching to a 230 VAC Power Supply

1. Remove the cover by unscrewing the four cover screws. (See Figure 3-4 for locations of cover screws.)
2. Turn the main power switch to the “off” position. (See Figure 3-10.)
3. Disconnect AC power cable. See Sections 3.8.1 or 3.8.2 depending on the type of AC connection used in this installation.
4. Disconnect the backup battery. (See Figure 3-13.)
5. Switch the power supply select switch to the up position. The switch will show 230VAC. (See Figure 3-10 and Figure 3-12.)

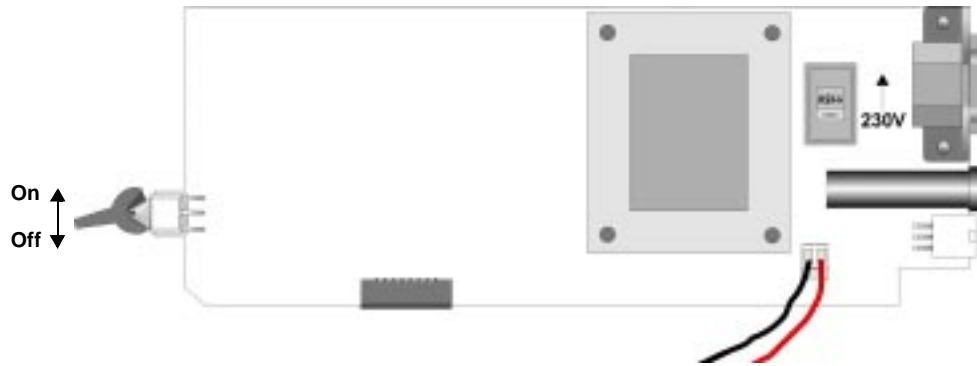


Figure 3-10 Side View of Power Supply Assembly

6. Reconnect the AC power cable.
Note: Make sure to plug the AC power cable into a grounded 240VAC outlet.
7. Reconnect the back-up battery. (See Figure 3-13.)
8. Turn the main power switch to the “on” position. (See Figure 3-10.)
9. Replace the cover by screwing in the four cover screws. (See Figure 3-4.)

3.8.4 How to Verify Earth Ground

To verify earth ground at the AC outlet the 9500 receiver is powered from, use the following steps:

1. Measure the AC voltage between the center ground post and each side of the outlet (see A & B in Figure 3-11). You should read approximately 120 VAC (or 240VAC for 240VAC circuits) at measurement point B and nominal VAC at measurement point A.

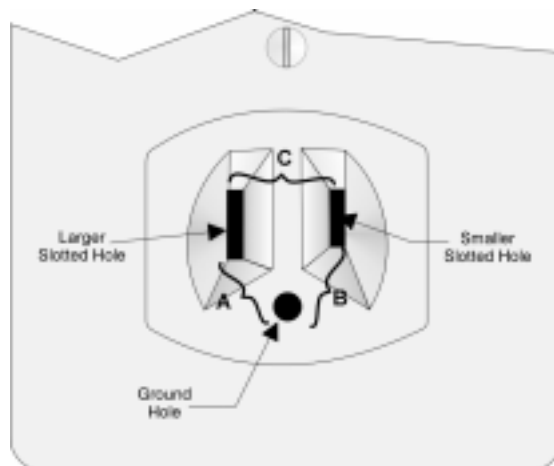


Figure 3-11 Outlet Voltage Measurement Points

2. Measure the voltage between the two slotted holes. It should be equal to the voltage reading at measurement point B. (See Figure 3-11.)

If these voltages are not equal, the outlet does not have a proper earth ground.

3. Ground the outlet by running a wire (18 gauge or higher) to a good earth ground.

The wire should be of equal or greater diameter to the wires used to feed the outlet. It may be necessary to have a licensed electrician ground the outlet.

3.9 Battery Connection

To install the 6712 backup battery follow these steps:

Note: The 6712 (12VDC 7ah battery) will provide a minimum of 4 hours of battery backup power. (See 2.3.2 for UL requirements.)

1. Place the 6712 backup battery into the battery bucket. (See Figure 3-12.)

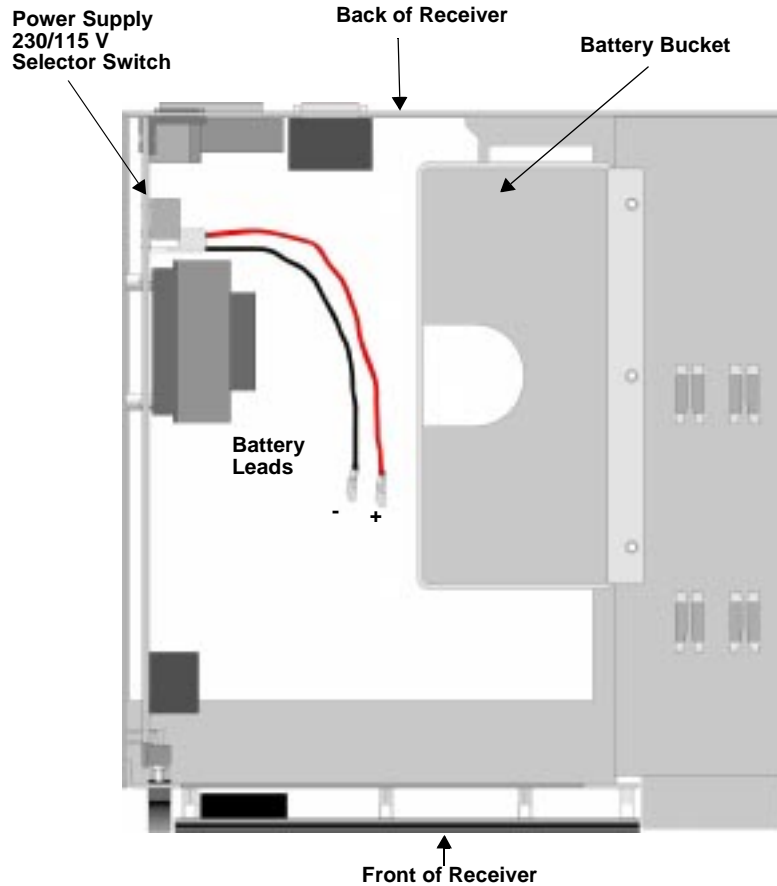


Figure 3-12 Top View of Receiver

2. Connect the RED terminal to the positive (+) side of the battery.

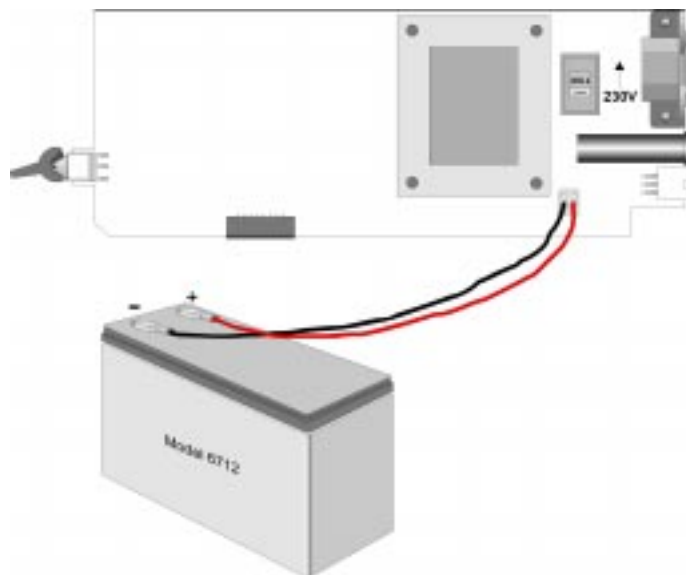


Figure 3-13 Battery Connections

3. Connect the BLACK terminal to the negative (-) side of the battery.

Note: Incorrect polarity can damage the battery and the 9500.

3.10 Automation Computer Connection

An automation computer can be connected to Com Port 1 on the 9500 receiver. Com Port 1 is a 9-pin DTE port. Refer to Section 8 for details on automation communication protocols. The diagrams below describe some of the cable options.

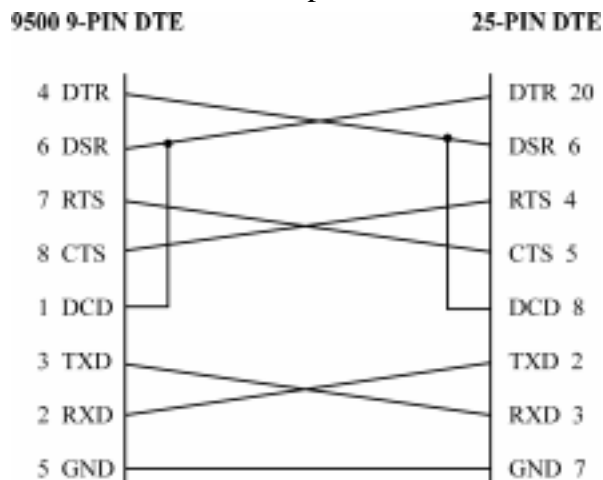


Figure 3-14 25-Pin Null Modem Cable Connection

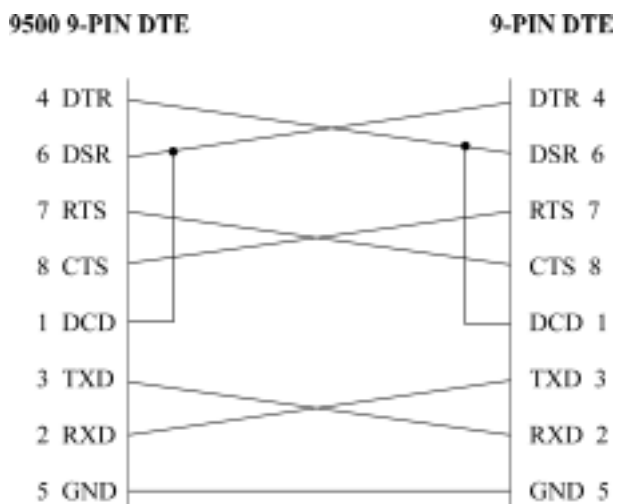


Figure 3-15 9-Pin Null Modem Cable Connection

3.10.1 Computer Port Baud Rate Selection

The computer port baud rate is selectable from 110 to 19200 (See Section 5 *Programming*).