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The Model 100 Inmate-Visitor Telephone System

Installation and Operation Guide

Overall System Description

The Model 100 Inmate-Visitor Telephone System consists of a power supply, and _____ pairs of telephone handsets, each pair terminating in a common electrical box (the Splitter-Isolation Network) using armored cables. The common electrical box for each conversation pair contains the splitter-isolation circuitry, and is usually mounted on the visitor's side of the partition. Since it is necessary for the armored cable from the inmate's handset to pass through the partition at some point, generally near the electrical box, two washers and locknuts are provided to insure that no contraband can be passed through the opening after installation.

A single pair of conductors connects the power supply to all of the electrical boxes using standard EMT thin-wall conduit. The isolation circuitry in each electrical box eliminates cross-talk, while providing protection to all other conversations in the event of a short-circuit or open-circuit in any handset.

Voltages in the system are low and safe, and, due to completely solid-state design, the entire power consumption is only 15 watts, on the order of a night light, for powering up to 20 booths. The unit can be left on indefinitely with no ill effects. Some institutions prefer to wire the power supply to the visiting area light circuit so that it is powered when the lights are turned on. Others just plug it into an electrical outlet and forget it.

The handsets are sealed permanently to prevent contraband passage and vandalism, and hanger brackets are provided for neat storage of handsets when not in use.

Installation

To begin the installation, first examine the contents of carton(s). For a system with _____ conversation pairs, there should be (including spares):

_____ electrical boxes, including one marked "SAMPLE"

_____ covers for electrical boxes

_____ handsets, each with armored cable, (two attached to box marked "SAMPLE"), inmate handsets supplied with security hardware on wire end of armored cables

_____ power supplies

_____ hanger brackets

and a bag containing spare washers, locknuts, resistor, tool, and wire.

Assuming that the contents check out, proceed as follows for simple, quick installation of system:

Basically we will be mounting one of the electrical boxes at each visiting booth location. Then we will connect the visitor's handset and hanger bracket, and the inmate's handset and hanger bracket. Conduit will connect all of the electrical boxes to one another and to the power box. Please note that there are knockouts in each electrical box for 1/2" and 3/4" conduit. For most systems the 1/2" conduit should be more than sufficient since only a single pair of conductors connects the line of electrical boxes to the power supply.

However, if any or all of the conversations are to be monitored, this requires an additional wire from the electrical box of the conversation pair to be monitored, back to the monitor location. In this case it might be easier to use 3/4 inch fittings and conduit for more working room in the conduit.

Step By Step Installation Procedure

1. First locate the electrical box marked “SAMPLE” (with two handsets attached), and set it aside. In this box the handset leads have been connected to the double-rowed terminal connection block, or splitter-isolation circuitry. It is to be used as a guide, and thus, installed last.
2. Next, on the visitor’s side of the partition, locate where conduit (thinwall EMT) will be run. The conduit will connect the _____ electrical boxes to the power box. Usually the conduit is run just below a counter or table top surface, and the power box is mounted at one end of the room on the partition wall for a straight run.
3. Select an electrical box and mount it on the visitor’s side of the partition using the holes to either side of the terminal block. The armored cables from visitor and inmate enter through the top of the box and are secured using the supplied compression fittings. Position the box so that these fittings are facing up.
4. After the box has been mounted the visitor’s handset can be run through countertop, if used, and into the electrical box. See Figure 2 and use “SAMPLE” box for clarification. Usually the visitor handset cable is run through the right compression fitting and secured. Note that polarity of the wires is not important. That is, either wire can go to either terminal. The handset cable can now be extended, and a hanger bracket mounted in a suitable position for storage of handset when not in use.
5. To install the inmate’s handset a hole must be drilled in the partition. The outer diameter of the armored cable is 5/16”. A hole 3/8” in diameter should suffice. After the hole has been drilled, remove one washer and locknut from an inmate handset, and snake the cable through the partition, from the inmate’s side. Secure the cable by replacing washer and locknut on the visitor’s side. Tighten both locknuts until secure. Route the inmate cable into the left compression fitting of the electrical box, and connect the wires, as in Figure 2 and as in the “SAMPLE” box. As before, polarity is not important. On inmate’s side the handset cable can now be extended to locate position for mounting hanger bracket. This completes installation of one booth.

6. Using another electrical box and a piece of standard EMT thin-wall conduit, available at any electrical supply house, locate position of the electrical box for the second booth. Cut EMT to a length so that the two boxes are connected using suitable fittings (not supplied), and mount second box.
7. As in the first booth, handset cables are now snaked into the electrical box, secured using cable reduced fittings, and wired to the terminal connection block. Hanger brackets, as before, are positioned and mounted for inmate and visitor handsets.

All booths are installed in a similar manner, the last using the “SAMPLE” box. Once all booths have been installed, power can be wired to the system. This will complete installation of the Model 100 Inmate-Visitor Telephone System.

8. Install the power supply in a closet or enclosure on the visitor side, or in the control room, if nearby. Run conduit from the power supply to the closest of the previously mounted electrical boxes.

Examine the supplied wire. Notice that the two conductors are different colors. Select one and designate it as the + conductor color, and then other as the – conductor. From this point until the installation is completed, exercise caution in selecting the proper conductor for each connection.

9. Cut a length of wire sufficient to connect the power supply to the closest of the electrical boxes. Snake the wire through the conduit and connect the + conductor to the + terminals of both the power supply and the electrical box terminal connection block. Similarly using the – conductor, connect the – terminal in the power box to the – terminal in the electrical box terminal connection block. Tighten the screws on the power supply. Do **not** tighten the screw terminals in the booth electrical box.
10. Using another length of wire, connect the + terminal of the first electrical box to the + terminal of the next electrical box in line. Connect the corresponding – terminals of both boxes. Now the screws can be tightened .

Now proceed as above, all the way down the line, connecting the + terminal to the next + terminal, and the – terminal to the next – terminal so that polarity is preserved at all booths. When this is completed, the power box + terminal, and all booths’ + terminals should be connected using one color conductor. Similarly, the power box – terminal and all booths’ – terminals should be connected using the other colored conductor. This completes

installation of the individual booths. The covers can now be secured on the booth electrical boxes.

11. Finally, 120 volts AC is required for operation of the system. A standard line cord is provided. As soon as this is completed the Model 100 Inmate-Visitor Telephone System is ready for use.

Proceed to the Operation section of this manual before applying power, to familiarize yourself with operation of system.

Operation

Operation of the system is simple. The two power supplies each have ON-OFF switches. Each is normally turned to the ON position. The pilot lights on the power supplies indicate that they each have power for proper operation. Each power supply has a fuse. If necessary, the 1 Amp fuse is easily replaced.

The automatic changeover circuitry insures that, in the event of failure of one of the power supplies, the other will automatically continue to supply power to the system.

The pilot lamp on the front of the cabinet monitors voltage to the handsets. As long as the pilot lamp is lit, the handsets should operate normally.

The condition of the power supplies should be checked periodically (monthly). Simply turn one to the OFF position and monitor the front cabinet pilot lamp. Then turn that power supply ON and turn the other one OFF. If the pilot lamp does not remain on throughout the test, return the defective power supply for service. Power supplies are mounted using two screws through the side of the power box cabinet.

Maintenance

Problem 1. All conversation pairs are dead and pilot light is out

Check power supply switches. Test to see that 120 volts A-C is applied to the unit.

Problem 2. Pilot light is on but all handsets are dead.

Check wiring carefully. Locate a break in the wire between power box and electrical boxes.

Problem 3. While performing routine testing, pilot lamp goes out when left (or right) power supply is switched off.

Return defective power supply for repair. To do this... **FIRST TURN OFF OR DISCONNECT POWER SOURCE.** Then disconnect input and output wires, and remove power supply by unscrewing the screws on the side of the power box.

Problem 4. The three booths closest to the power box operate fine. All others are dead.

Check wiring between third and fourth booths for a break in the cable or loose connection on either terminal connection block.

Problem 5. All phones are operational but the cabinet pilot light on the cabinet is out.

Replace bulb by unscrewing jewel and removing bulb by push and twist motion.

Problem 6. One conversation pair is dead. All others are operational.

Open electrical box corresponding to this pair. If there are loose wires reconnect and test. Otherwise, with the system on, using a clip lead or a piece of wire, short circuit the inmate's wires while they are still

connected top the terminal connection block. If the visitor's handset becomes alive during this procedure, this indicates an open circuit in the inmate's handset. This handset should be replaced. Similarly, if while shorting the visitor's handset, the inmate's handset becomes alive, this indicates that the visitor's handset should be replaced.

Power Supply Fuse - AGC 1 Ampere

