

Chapter 3

INTRODUCTION

This section of the *289H-M LSS Installation & Operation Manual* describes the requirements and procedures for installing the 289H-M monitor in the central office. If you have not yet completed all of the procedures described in Section 2 of this manual, please do so before proceeding.

UNPACKING EQUIPMENT

1. Carefully unpack the 289H-M LSS shipping carton(s) and check the contents for damage.

Note: System Studies Incorporated is not responsible for damages sustained during shipment or unpacking. If it is apparent that the equipment has been damaged, please notify the shipping agent before you proceed with the instructions in this section of the manual. It is also advisable to take photographs, if possible, of the damaged shipping container(s). The photos may be helpful with efforts to settle potential damage claims.

2. Verify that all of the required components have been shipped. The enclosed packing slip indicates the quantity and type of components included in the shipment.

The basic 289H-M LSS includes the following components:

- 289H-M chassis equipped with a 1) controller card (either the standard modem version or the LAN version), a 2) utility card (either standard or tone-capable) and 3) one of the available relay cards
- Six foot RJ-11 to RJ-11 telephone line cable (for modem controller cards only)
- Module: Jack/IDC Connection

To complete the 289H-M installation, you will also need:

- One (1) connector block, either subscriber or dedicated. Please note that a connector block is NOT required if the 289H-M was ordered with a Sparton Dedicated Replacement Card (SPDR).
- Either one (1) or two (2) connector block to relay card cables (male/male or male/female, depending upon type of 289H-M ordered).

3. If any of the components ordered have not been included in the shipment, please notify the System Studies Incorporated Shipping Department at (800) 247-8255 or (831) 475-5777.

INSTALLING THE 289H-M LSS MONITOR

The following tools are required during the installation of the 289H-M:

- Medium straight-blade screwdriver (for mounting chassis)
- Small straight-blade screwdriver (for securing power connection)
- Wire strippers
- Wire wrap tool for securing device pair tip and ring jumpers to the 289H connector blocks

Before beginning the 289H-M installation, make sure you have a copy of the central office work order that was prepared for the 289H-M LSS installation. This work order identifies the equipment rack number and position for the chassis, the fuse bay and fuse number required for power connection, the phone line assigned for use with the monitor (if applicable), and the connector block bay number and position.

Once this information has been determined, you can install the 289H-M chassis as described below:

1. Using the screws provided, attach the mounting brackets to the 289H-M chassis. Depending how the brackets are positioned on the 289H-M, the unit can be installed in either a 19 or 23 inch equipment rack. It can also be mounted flush with the front of the rack or slightly forward. When installing the 289H-M in a 19 inch rack, the long side of the bracket is screwed to the monitor and the short side attaches to the rack. For the 23 inch rack, the bracket is reversed, with the short side screwed to the monitor and the long side attaching to the rack. FIGURE 3-1 illustrates these possible mounting positions. Using the screws provided, install the 289H chassis in the designated equipment rack. (It is recommended that two technicians secure the chassis in place, due to its size and weight.)
2. Install the 289H-M chassis in the designated equipment rack. The monitor placement should allow for adequate clearance at both the top and rear for maintenance access.
3. Loosen the cover screws on the front of the monitor and remove the cover by sliding it toward you. The top card in the chassis is the Utility Card. Locate the power switch in the front right corner (see FIGURE 3-2). Make sure that the power switch on this card is in the OFF position. Please note that the Utility Card shown in FIGURE 3-2 is the older, “non-tone” version, but the power switch on both cards is located on the front right corner of the card.

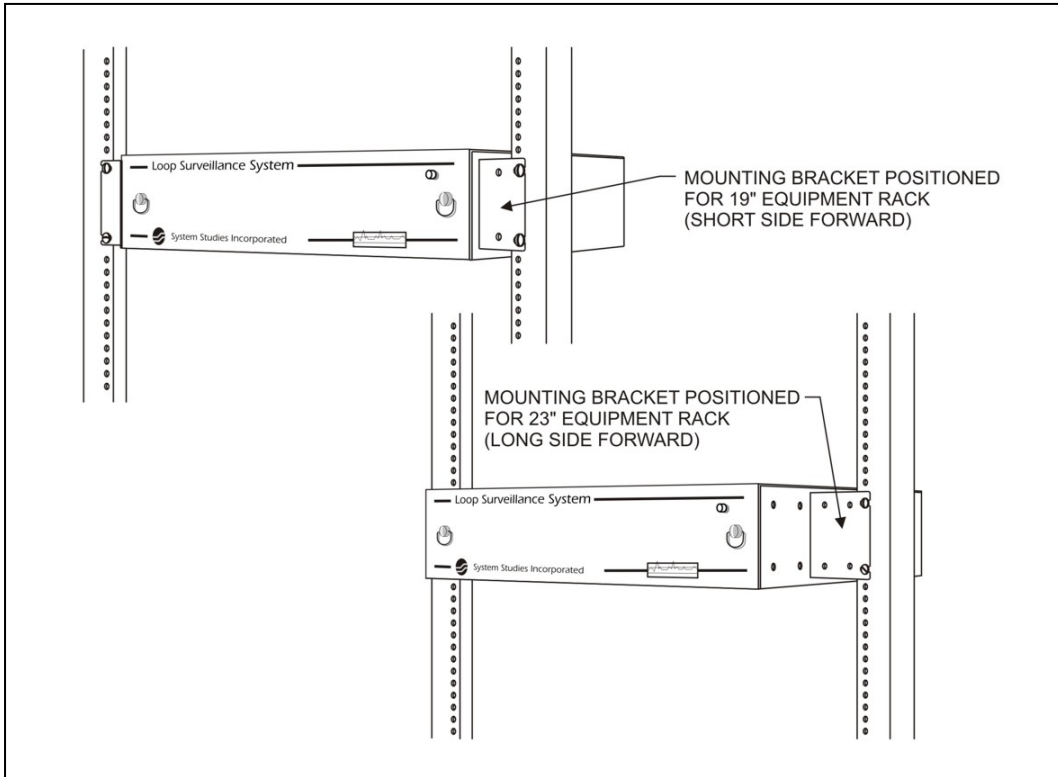


FIGURE 3-1: 289H-M WITH MOUNTING BRACKETS

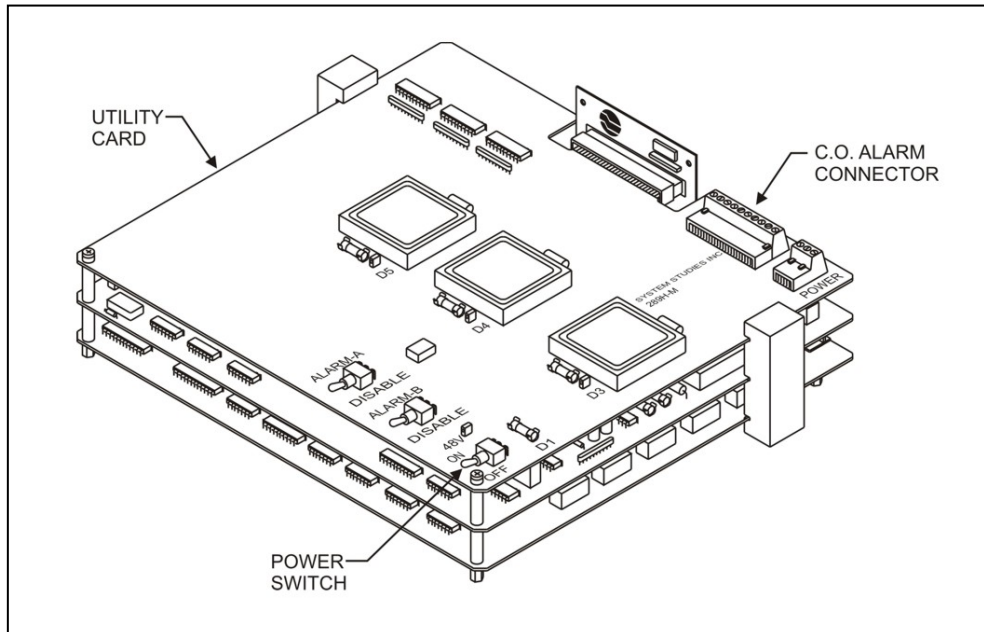


FIGURE 3-2: 289H-M POWER SWITCH

Power Supply Hookup

1. The central office installation work order specifies what fuse panel to use for supplying CO battery to the 289H monitor. Make sure that you use only CO talk battery. This CO power provides for the filtering of spikes that may occur when the central office batteries are being charged with AC power.
2. Check the continuity of the power leads from the central office battery fuse panel to the 289H monitor. You must be able to identify the -48 volt power lead, the +48 volt return, and the frame ground.

Note: The frame ground wire should be 18 to 20 AWG wire. The -48 volt power lead and the +48 volt return conductor should be 18 to 22 AWG wire. The ground wire should be the same gauge as the power conductor or one gauge thicker (one gauge number smaller). However, the ground wire should never be thicker than 18 AWG.

3. Find and remove the power connection block on the 289H Utility Card. This small green or black rectangular block is located on the back right corner of the card, as viewed from the top of the 289H-M chassis (see FIGURES 3-2 and 3-3).

It is recommended that you remove the power connection block from the Utility Card before attempting to wire it. This will simplify the wiring process and prevent accidental damage to the card. The connector block can be removed (unplugged) by pulling it straight out from the back of the card. Only moderate force is required.

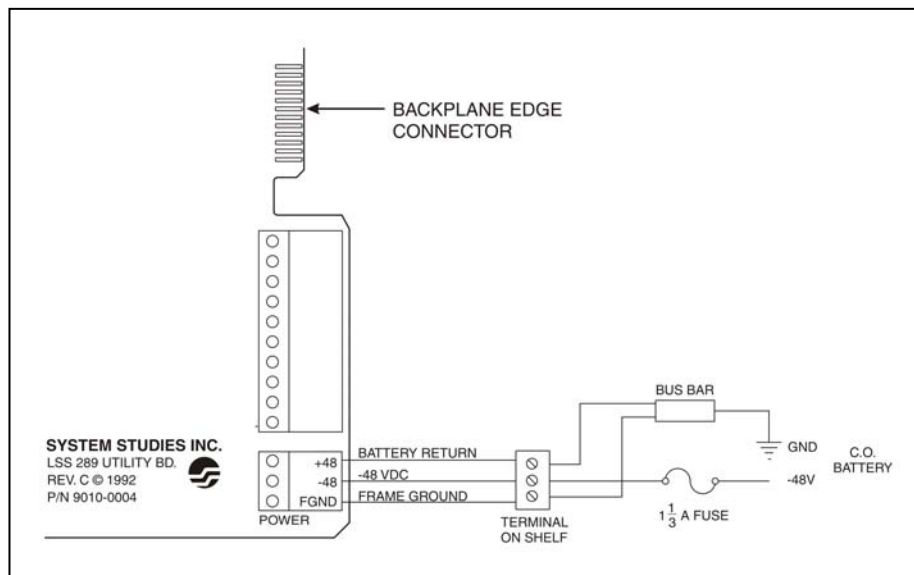


FIGURE 3-3: 289H UTILITY CARD WIRING SCHEMATIC

4. Using a small, straight-blade screwdriver, unscrew the terminal jaws on the Utility Card's power connection block. The terminal jaws, which are used to lock the conductors in place, are shown enlarged in FIGURE 3-4. When turned counterclockwise, the adjustment screws on the top of the block open the jaws so that the power, return and ground leads may be inserted.

Note: Make sure that the jaws are opened all the way (so they are no longer visible) before you insert the ends of the conductors.

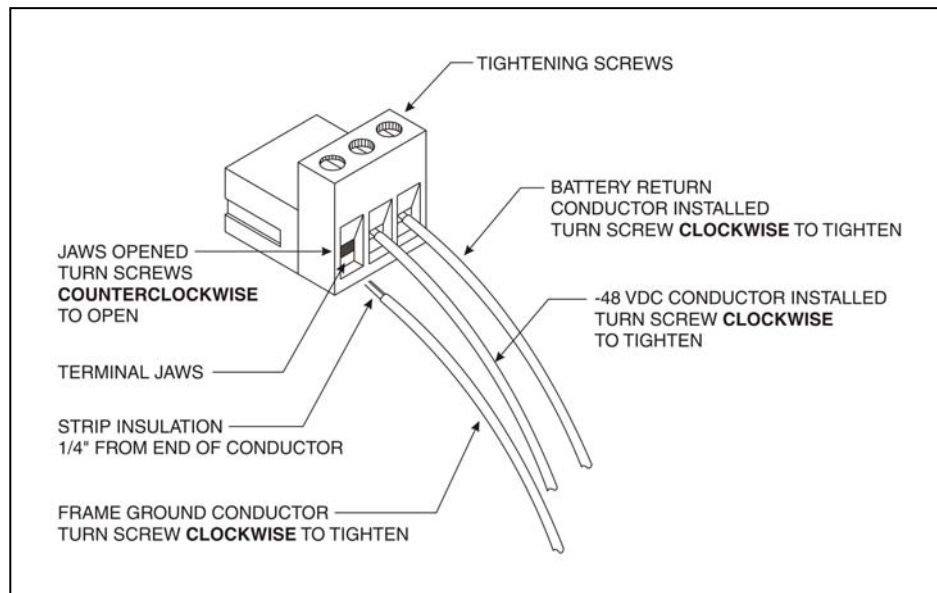


FIGURE 3-4: 289H UTILITY CARD POWER CONNECTOR WIRING

5. Identify the conductor that provides the -48 volt power supply from the CO battery. Insert this lead into the CENTER terminal jaw and tighten the appropriate adjustment screw (by turning it clockwise) to ensure a proper connection. As you tighten the screw, the jaw will push the conductors toward the side of the block with the adjustment screw.
6. Insert the other conductors. The +48 volt return conductor is installed above the power lead in the top terminal jaw. The frame ground (FGND) is installed in the bottom jaw. Both of these connections are shown in FIGURE 3-4.

Note: A short 18 to 20 AWG wire should be used to connect FGND directly to the CO earth ground bus. This connection should be as close as possible to the 289H-M. The ground wire should be the same gauge as the power conductor or one gauge thicker (one gauge number smaller). An incorrect connection may cause erratic device readings.

WARNING: A good frame ground or earth ground must be established or the 289H LSS will not operate properly. Make sure that the wire used for grounding can be manually traced back to an acceptable earth ground. Do not merely assume that established grounding procedures are satisfactory.

7. Plug the connection block back into the 289H Utility Card, making sure you replace it in its proper position (see FIGURE 3-3).

- After the power connection block has been securely fastened in the Utility Card, flip the power supply switch on. In a few seconds the 289H-M's power supply indicator will light, indicating that the unit is properly powered.

CONNECTOR BLOCK INSTALLATION

As part of the 289H-M installation process, you will need to mount the 289H-M connector block in the designated equipment bays as described below:

- Determine the location(s) of the designated equipment bays from the central office work order.
- Arrange to obtain a suitable mounting bracket for the connector blocks. System Studies supplies a mounting bar for this purpose (Part No. 9800-6090), intended for use with the 9800-6055 and 6056 connector blocks. Both blocks are equipped with a variety of slots for easy installation (FIGURE 3-5).

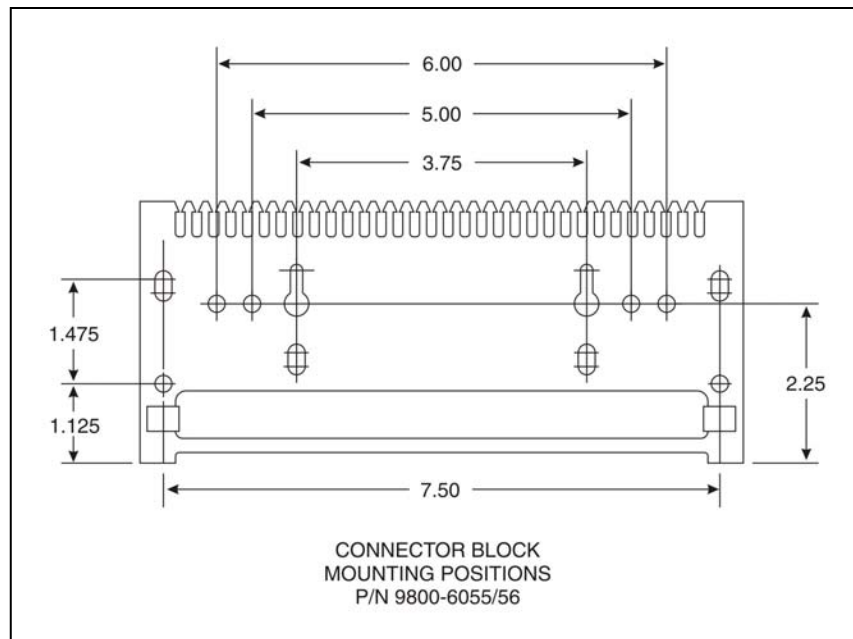


FIGURE 35: 289H CONNECTOR BLOCK MOUNTING POSITIONS

- Bolt any mounting brackets that are not already in place into the designated equipment bays.
- Before you bolt the blocks into the brackets, make sure that there is sufficient room below each one to insert the connector cables. If there is adequate access to the blocks, bolt the blocks onto the equipment bay brackets using the nuts and bolts provided.

With the connector blocks in place and the 289H chassis installed, the final installation procedures involve wiring the blocks and making the proper cable connections to the 289H relay cards. These procedures are described in Section 4 of this manual.