

894-B

LINE CONCENTRATOR NO. 1A INSTALLATION AND REMOVAL OF CONTROL UNIT

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1. GENERAL

1.01 This section covers procedures for installation and removal of the line concentrator No. 1A control unit (CU).

1.02 This section is reissued to include procedures for installing and removing the wall-mounted line concentrator No. 1A control unit. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The control unit consists of crossbar switches and relay units mounted on an angle-iron framework, 7 feet 1 inch high and 3 feet 2-1/4 inches wide and weighing approximately 500 pounds. The control unit may be mounted in a control frame (Fig. 1) or an installation may be made on an internal wall of a central office (Fig. 2).

1.04 The control frame, as shown in Fig. 1, consists of a bulb-angle frame and is available in two sizes. One is 11 feet 6 inches high and has a guardrail 10 inches wide. The other is 9 feet high and 12 inches between guard-

rails. Each framework has a fuse panel and a terminal strip assembly connected by a small local cable. The control unit is equipped with a terminal strip that matches the one on the control frame. Installation of the unit is completed by cross-connecting corresponding terminals of these two sets of terminal strips. The control frame terminal strips are connected by switchboard cable to distributing frames and other frames in the central office.

1.05 The control unit is mounted in the control frame with the flat side of the unit against the wide flange at the rear of the frame. Eight .216-24 mounting screws are provided for fastening it to the frame.

1.06 The wall-mounted control unit, as shown in Fig. 2, requires that the wall selected for the installation be fitted with the yoke part of the floating hinges, a securing arm to hold the equipment in its closed position against the wall, cable guide and protection brackets.

1.07 For wall mounting, the control unit frame must be modified. The modification, as shown on Drawing ED-94811-10, involves mounting the plate half of the hinges, cable clamps, castor and cradle assembly, and providing a securing arm pin hole. The modified control unit may then be moved on its castors to the previously prepared wall-mounting location and affixed there with the hinge pivot pins and securing arm.

1.08 The fuse panel furnished for the wall-mounted control unit is a wall-mountable assembly. This fuse panel may be located to fit the installation but must be within 16 cable feet from the terminal strip on the control unit. With the exception of the connections to the fuse panel, all external connections to the control unit are made by switchboard cable to the distributing frame. The cable is terminated on the control unit terminal strip.

2. LIST OF TOOLS AND MATERIALS

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
FRAME AND WALL-MOUNTED UNITS	
R-1255	31/32 and 1-1/6 inch Double Open End Wrench
R-1844 (2 Required)	1/4-Ton Chain Hoist, or equivalent
R-2512	8-inch Adjustable Wrench
R-72068 (2 Required)	U-Bolt
—	Dolly
—	1-Lb Claw Hammer
—	Nail Puller
—	8-inch or 9-inch Pliers
—	5-inch E Screwdriver
MATERIALS	
FRAME-MOUNTED UNITS	
—	Canvas, or suitable insulating material (for wrapping fuse panel; see 3.07 and 4.02)
—	Friction Tape
—	1/2-inch Manila Rope, or equivalent
P48D861	Precut Wire Strap
TOOLS	
WALL-MOUNTED UNITS	
R-3032	1/2-inch Electric Drill
R-2345	3/8-inch Twist Drill
R-1471	No. 13 Twist Drill
R-2302	1/2-inch Twist Drill
R-1155	.246-inch Twist Drill
R-1526	.216-24 Tap
—	3-inch D Screwdriver

3. METHOD

Unpacking

3.01 *Caution: The following method includes unpacking the control unit, placing it on a dolly or attaching castors, and moving it to the location for mounting. Be sure that sufficient manpower is available to accomplish this without risk of personal injury or damage to the equipment.*

3.02 The control unit is packed in the same manner as a regular frame, that is, placed on a shipping skid and encased in a shipping crate.

3.03 Unpack the unit by removing the nails at the bottom of the shipping crate, using a nail puller, and lifting the crate off the skid. If the crate cannot be lifted off conveniently, remove the nails from one side and slide it off from the opposite side. If possible, a control unit that is to be wall-mounted should be unpacked in an area where a hoist can be used to lift the unit to an upright position.

Mounting Unit on Control Frame

3.04 Place the shipping skid on a dolly to transport the unit to the control frame location for mounting.

3.05 Cut and remove the metal strapping which holds the control unit to the shipping skid, using the 8-inch or 9-inch pliers. The control unit is also blocked to the skid so that, with reasonable care, the unit will remain upright during the moving of the control unit to the frame location.

3.06 When the control unit is to be mounted, it will be necessary to remove the 20-ampere fuse located in the fuse panel at the top of the control frame. If the control frame fuse panel is fed from a larger capacity fuse located on a power distribution panel *and* this frame is the *only* frame to which this fuse supplies battery, remove this fuse also.

3.07 If power distribution fuse has not been removed, wrap the fuse panel in the control frame with a piece of canvas or other suitable heavy cloth to prevent accidental contact of the grounded chain hoist with the fuse holders located on the fuse panel.

3.08 *Caution: The control frame must be in correct vertical and horizontal alignment. Misalignment will tend to distort the control unit as it is tightened into place.*

3.09 Secure the chain hoists to the auxiliary framing above the wiring side of the control frame. Use the U-bolts, if required, for proper positioning and tighten with the R-1255

wrench. Place the hoists so that each hoist is even with or beyond the vertical members of the control frame and far enough out from the frame for the front of the control unit to clear any projection while it is being hoisted.

3.10 Move the control unit into the aisle until the top of the unit is in line with the load hook of the first hoist.

3.11 Attach the load hook of the first hoist to the top eyebolt and raise the unit high enough to attach the second load hook to the other eyebolt. Continue raising and guiding the unit until it hangs in a vertical position with the mounting holes in the unit at approximately the same height as those in the frame. Gradually push the unit into position on the frame and install the bottom mounting screws while it is still attached to the hoists. Install the remainder of the mounting screws. Disengage the load hooks, remove the chain hoists, dolly, and U-bolts, if used.

3.12 Remove the canvas from the fuse panel. Replace the fuse in the power distribution panel, if removed. Do not replace the 20-ampere fuse in the control frame fuse panel.

Cross Connections, Frame-Mounted Unit

3.13 The control unit is factory wired to the terminal strips located at the top of the unit. The control frame terminal strips have been cabled to the distributing and other frames at the time of frame installation. To cross-connect the two sets of terminal strips together is all that remains for the installation of the control unit. Cross connections shall be made with P48D861 precut wire straps. Solderless wrapped connections are required. Refer to Section 069-132-811 for the procedures and tools required for making these connections.

3.14 Refer to SD-96536-01-G1, G2, CADs 1 through 6 for the cross-connection assignments. Note that the cross connections are run between like-numbered terminals.

3.15 Upon completion of the cross connections, refer to Sections 067-105-201 and 067-105-501 for the equipment line-up and cut-over procedures.

Mounting Unit on Wall

3.16 With the control unit unpacked and resting on the skid (3.03) and prior to removing the steel straps, drill all the holes in the unit framework as indicated on Drawing ED-94811-10. Mount the castor assembly to the cradle assembly and attach to the bottom of the unit. Mount the upper and lower hinge plates as shown on above drawing.

3.17 Cut and remove the metal straps which hold the control unit to the shipping skid, using the 8-inch or 9-inch pliers.

3.18 Secure the chain hoists to the framing or other suitable support above the control unit, keeping in mind that over 500 pounds is to be supported. If suitable hoisting facilities cannot be obtained, local arrangements should be made for having the control unit lifted into place.

Caution: *It is not recommended that the control unit be lifted to the upright position by "manhandling" alone.*

3.19 Block the base of the control unit so that the unit will not roll on its castor assembly as it is being raised to an upright position. If the unit is to be rolled on the castor assembly to the mounting location, remove the castor locking screws.

3.20 Attach the load hook of the first hoist to the top eyebolt and raise the unit high enough to attach the second load hook to the other eyebolt. Continue raising and guiding the unit until it reaches the upright position and is resting firmly on the floor.

3.21 Push the control unit on its castor assembly to the mounting location against the wall.

Caution: *Carefully guide and support the unit while conveying it on the castor assembly.*

3.22 Guide the unit carefully into position so that the holes in the hinge plates are aligned with the holes in the previously mounted wall hinge assemblies. Connect the hinge plates to the wall hinge assemblies by inserting the hinge pivot pins into place.

3.23 Replace the castor locking screws, if previously removed. Adjust the castors so that the control unit will swing freely on its hinges. Lock the castors in position by securely tightening the castor locking screws.

Connecting Wall-Mounted Unit

3.24 Switchboard cable from the distributing frame is brought into the equipment by cabling approximately parallel to the axis of the hinge. This permits cable movement without frictional wear or tension when the equipment is rotated to the servicing position. Installation of the unit is completed by terminating the cable from the distributing frame on the factory wired control unit terminal strips, and completing connections to the fuse panel.

3.25 Refer to Sections 067-105-201 and 067-105-501 for the equipment line-up and cutover procedures.

4. REMOVAL

Caution: The removal procedure requires the manipulation of two chain hoists and manually guiding the unit onto a skid. Be sure that sufficient manpower is available to accomplish this without risk of personal injury or damage to the equipment.

Frame-Mounted Unit

4.01 This procedure for removal assumes that the concentrator has been in service and that it is desired to remove the control unit from the control frame for transporting to a different location.

4.02 Remove the 20-ampere fuse from the fuse panel located at the top of the control frame from which the control unit is to be removed. If the control frame fuse panel is fed from a larger capacity fuse located on a power distribution panel *and* this frame is the *only* frame to which this fuse supplies battery, remove this fuse also. If power distribution fuse is not removed, wrap the fuse panel with a piece of canvas to prevent accidental contact with the grounded chain hoist.

4.03 Remove the cross connections, following procedures given in Section 069-132-811.

4.04 Place a 1/2-inch manila rope, or equivalent, over the auxiliary framing on the equipment side of the control frame. Locate the rope so that it can be used to hold the unit against the control frame and prevent it from swinging into the aisle when the mounting screws are removed. Tie one end of the rope to the top cross member of the control unit, remove the slack, tighten and tie the other end to adjacent framework.

4.05 Secure the chain hoists as covered in 3.09. Attach the load hooks of the chain hoists to the eyebolts located on the top of the control unit and take up the slack until the hoists will hold the unit as the eight mounting screws are removed. Check that the rope placed in 4.04 is tight enough to prevent the swinging of the unit when the mounting screws are removed due to the positioning of the hoists. Remove the mounting screws.

4.06 When the mounting screws have been removed, loosen the rope gradually and allow the control unit to hang vertically on the chain hoists, then remove the rope. Place the shipping skid, mounted on a dolly, under the control unit, lower by means of the hoists and guide it onto the skid. Remove the bottom load hook from the eyebolt and finish lowering the unit into position on the skid.

4.07 Before removing the second load hook of the chain hoist, block up the unit to prevent its tipping on the skid. After blocking the control unit, remove the second load hook.

4.08 Move the control unit to an area suitable for completing the blocking and applying the shipping crate.

4.09 Remove the chain hoists and U-bolts, if used. Remove canvas from fuse panel.

Wall-Mounted Unit

4.10 This procedure for removal assumes that the concentrator has been in service and that it is desired to remove the control unit from the wall mounting for transporting to a different location.

4.11 Remove the 20-ampere fuse from the wall-mounted fuse panel associated with the control unit.

- 4.12 Remove all connections from the terminal strips on the control unit.
- 4.13 Remove the four castor locking screws from the castor assembly. Save the screws for reuse later. Remove the hinge pivot pins. By rolling on the castor assembly, the control unit may be moved to an area suitable for hoisting the unit onto a shipping skid and applying the shipping crate.
- 4.14 Secure the chain hoists as covered in 3.18. Raise the control unit high enough for the shipping skid, mounted on a dolly, to be

placed under the unit. Lower the unit with the hoists and guide it onto the skid. Remove the bottom load hook from the eyebolt and finish lowering the unit into position on the skid.

4.15 Proceed as in 4.07.

4.16 After the control unit is secured to the skid, remove the castor and cradle assemblies and the hinge plates. Complete the blocking and apply the shipping crate.

4.17 Remove the chain hoists and U-bolts, if used.

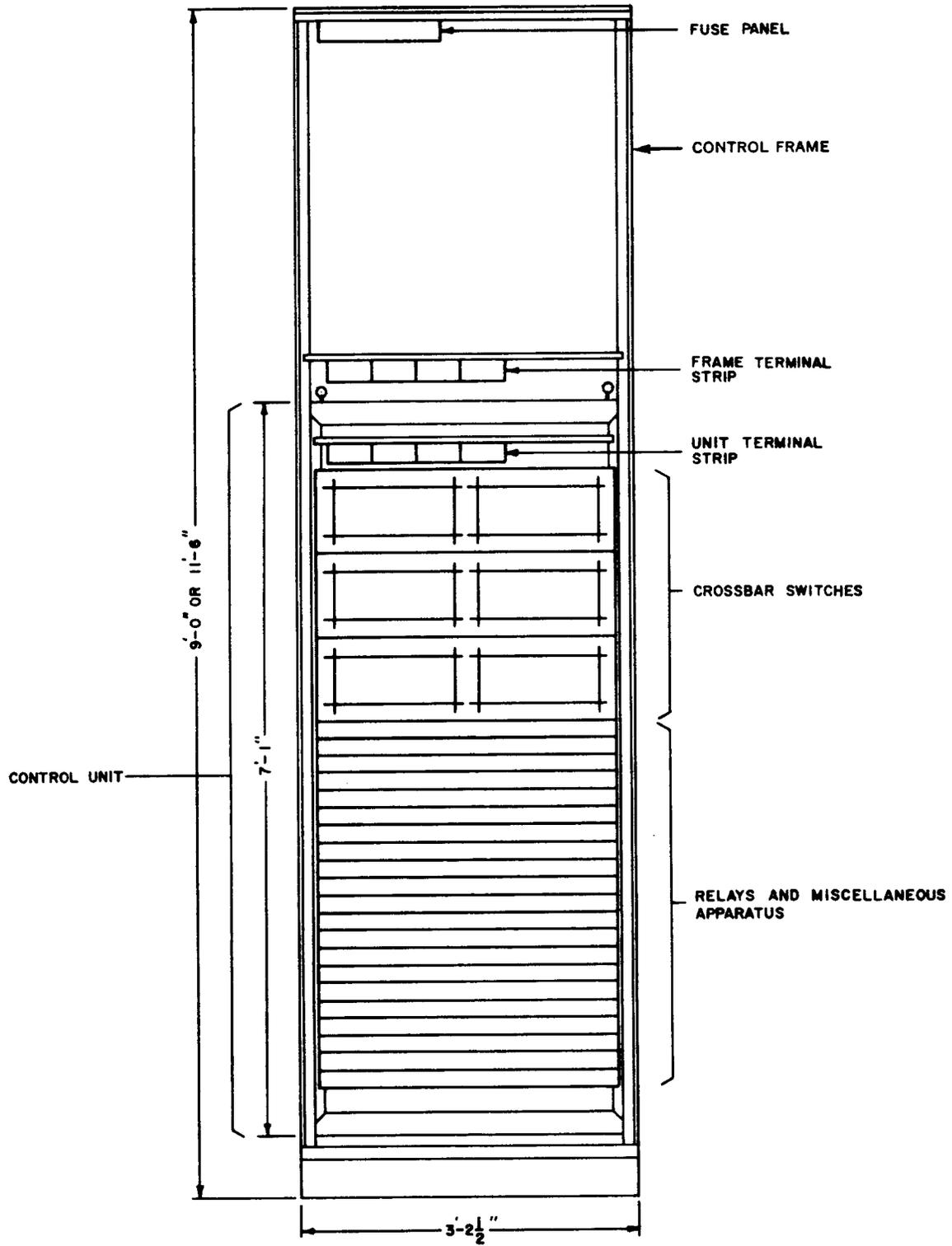


Fig. 1 - Line Concentrator No. 1A Control Frame

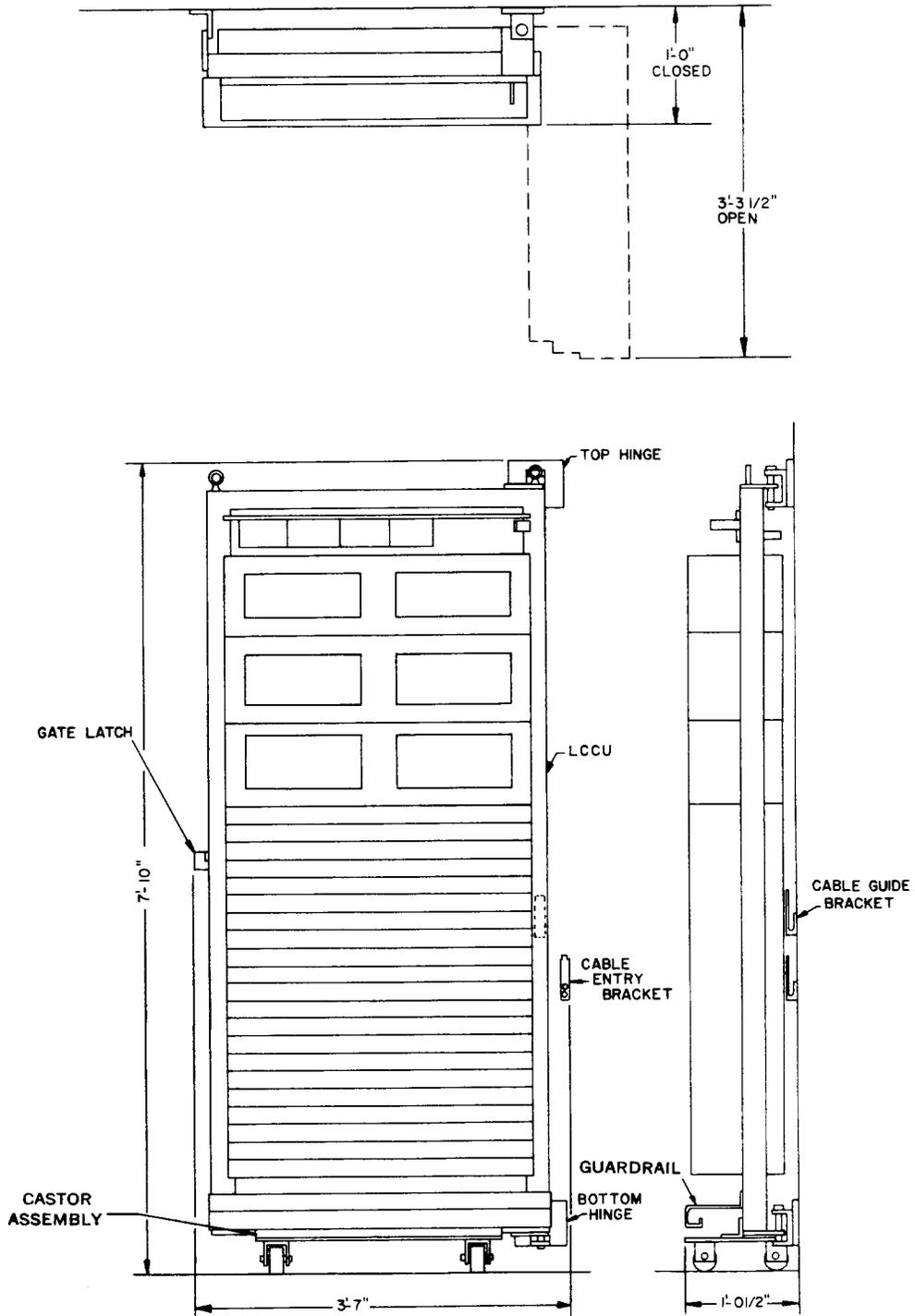


Fig. 2 - No. 1 Line Concentrator Wall-Mounted Control Unit