BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G31.430
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AT&T Co Standard

RESTORATION OF CARRIER CIRCUITS
USE OF 24A AUTOTRANSFORMER WITH HC DROP WIRE

Contents

1. GENERAL

1.01 This section covers the installation of the 24A autotransformer and associated apparatus for use with HC drop wire as an emergency link in restoring service on C and J type open wire carrier systems after storm breaks, or in establishing temporary line facilities where required for other reasons.

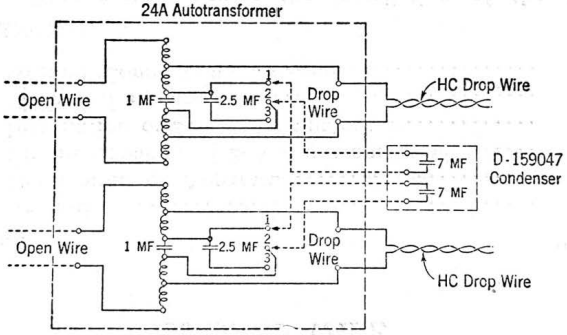
2. DESCRIPTION OF APPARATUS

2.01 **The 24A Autotransformer** consists of a galvanized steel housing, approximately 3-3/4" x 7-1/2" x 9-1/4" in size and containing two similar groups of apparatus, each consisting of a 23A autotransformer, a 226A condenser, and a 267A condenser. All of this apparatus is wired to binding posts on a strip near the bottom of the housing. The housing cover may be raised to give access to the binding post strip, and a latch is provided for holding the cover in the raised position. A hook bracket is provided for mounting the 24A autotransformer on a single crossarm. Bridle wires and drop wires are brought to the binding post strip through holes in the bottom of the housing. Corks for closing unoccupied wire entrance holes are shipped with each

new autotransformer in a separate container. The 24A autotransformer weighs approximately 15 pounds.

2.02 **The D-159047 Condenser** consists of a galvanized steel housing, about 2-7/8" x 5-1/4" x 8-3/16" in size and containing two 289A condensers which are terminated on four binding posts near the bottom of the housing. The housing cover is opened by grasping the sides near the bottom and pulling the cover out from the back of the housing. This releases the cover and permits it to be swung down, thus giving access to the binding post strip. To close the housing, the cover is swung back and its top inserted under the hood at the upper end of the housing; the lower end of the cover is then forced toward the back of the housing until it snaps into place. The wire entrance holes in the bottom of the housing have temporary putty fillings. Each D-159047 condenser weighs approximately 8-3/4 pounds.

2.03 The internal connections of the 24A autotransformer and the D-159047 condenser are shown below.

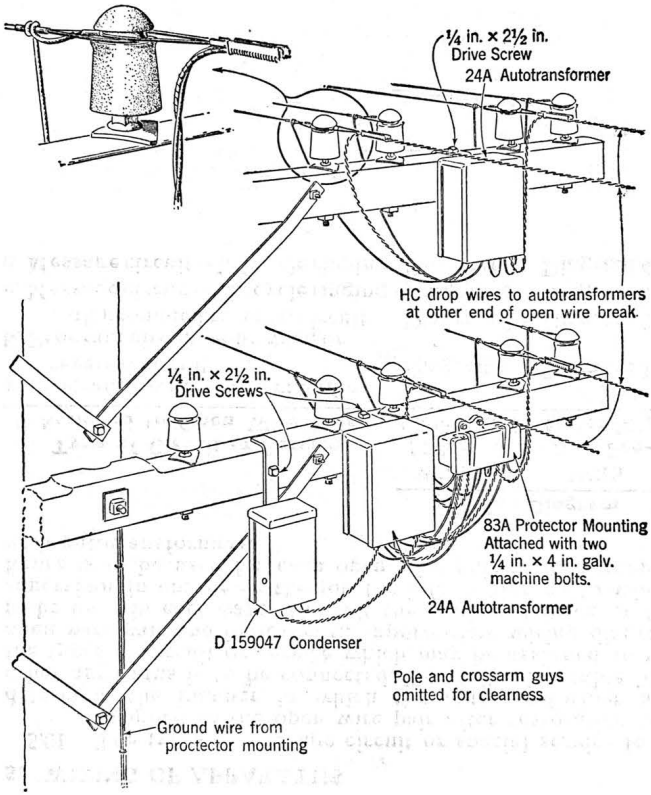


3. CIRCUIT CAPACITY OF 24A AUTOTRANSFORMER

3.01 The 24A autotransformer provides means for connecting two open wire pairs to two pairs of HC drop wire. The open wire pairs may be adjacent pairs or separated pairs on the same crossarm, or pairs on different crossarms. One half of the 24A autotransformer may also be used for connecting a single open wire pair to drop wire, leaving the other half as a spare.

4. INSTALLATION OF 24A AUTOTRANSFORMER

4.01 The following figure shows a typical installation of autotransformers with and without the auxiliary condenser. When open space cutout protection is specified, an 83A protector mounting should be installed as shown.



4.02 After the wiring has been completed, unused wire entrance holes in the autotransformer housing should be closed with corks, inserted from the inside of the housing.

5. WIRING OF APPARATUS

5.01 The types of message circuit or special service to be assigned to the open wire pair after restoration will determine the manner in which the autotransformer and other apparatus is to be connected. The following table lists the types of circuit or service which may be assigned to the open wire pair and indicates the appropriate wiring diagram to be used in each case. Consult the testboard force or the supervisor in charge of the job for information as to which figure is to be used for each open wire pair to be equipped with autotransformers.

Type of Circuit or Service Assigned to Open Wire Pair	Wiring Diagram	
	Without 83A Protector Mtg.	With 83A Protector Mtg.
a. Program circuit—with metallic reversal circuit	Diagram 1	Diagram 1A
b. Program circuit—one-way, or with grounded reversal circuit	Diagram 2	Diagram 2A
c. Message circuit— 20 cycle ringing	Diagram 3	Diagram 3A
d. Message circuit—135 cycle ringing	Diagram 4	Diagram 4A

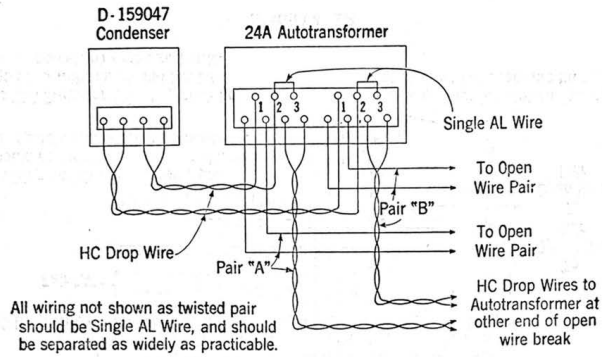


DIAGRAM 1

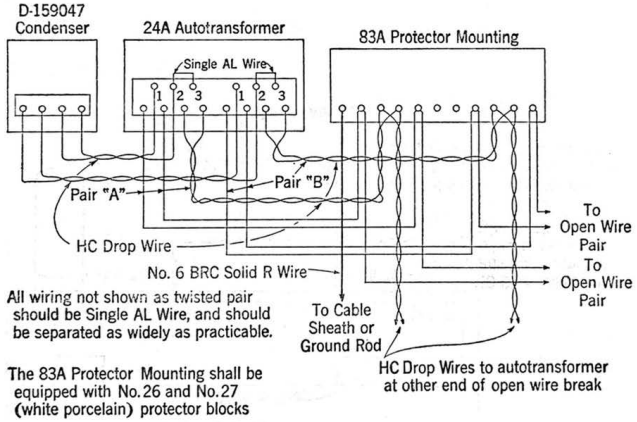


DIAGRAM 1A

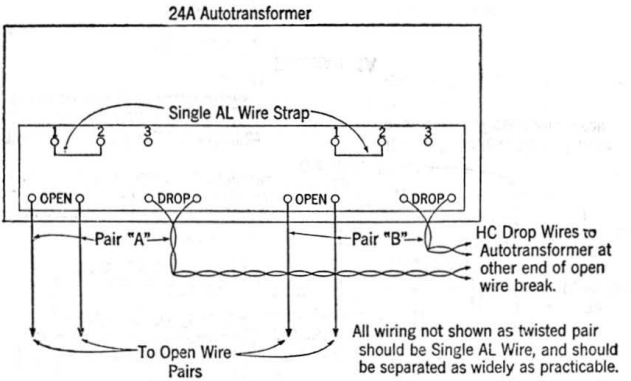


DIAGRAM 2

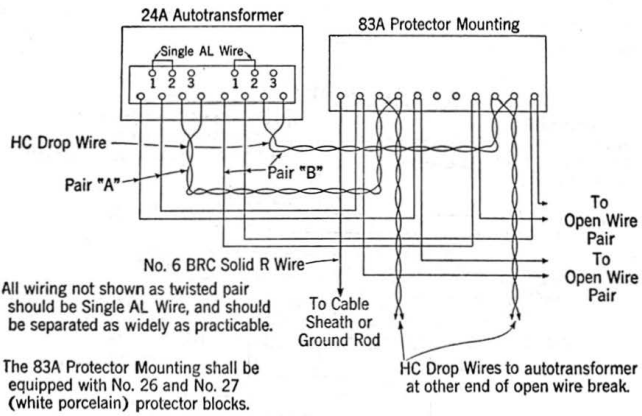


DIAGRAM 2A

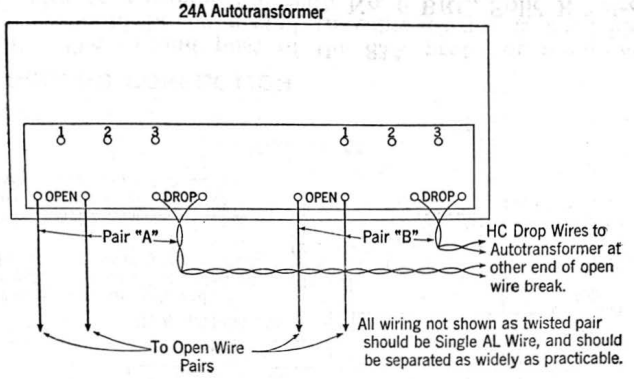


DIAGRAM 3

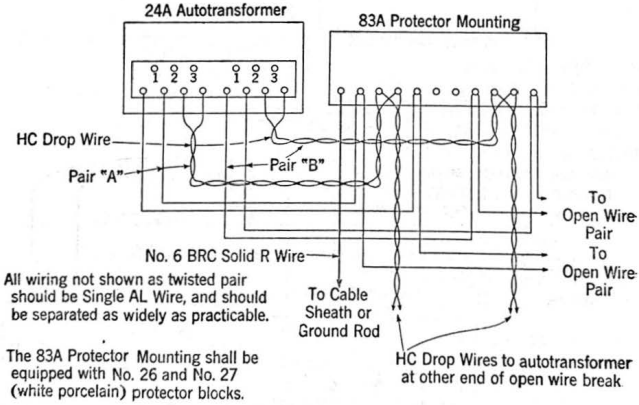


DIAGRAM 3A

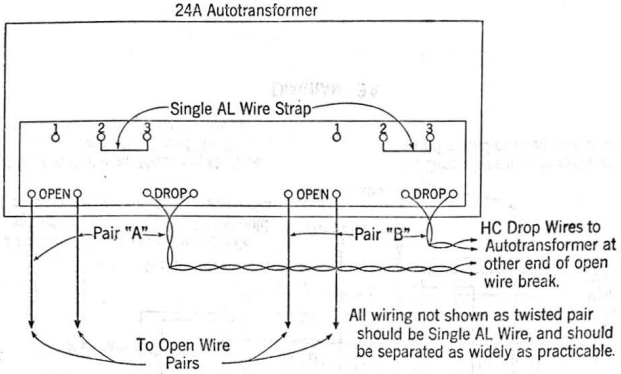


DIAGRAM 4

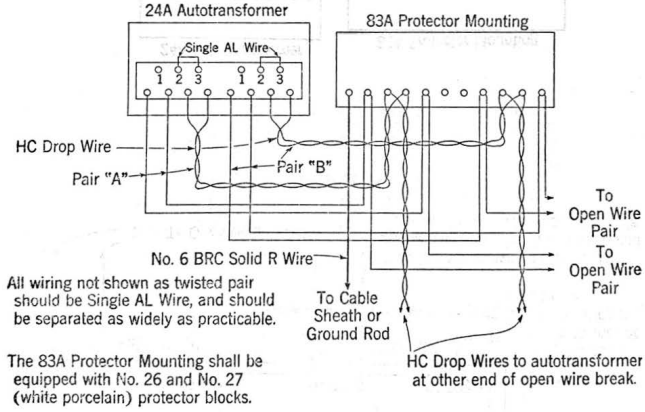


DIAGRAM 4A

6. GROUND CONNECTION

6.01 **The ground post of the 83A protector mounting should be connected to cable sheath if available, otherwise, to a ground rod, with No. 6 BRC, Solid R Wire.**