

RESTORATION OF CARRIER CIRCUITS USE OF 24A AUTOTRANSFORMER WITH C RURAL WIRE

CONTENTS	PAGE
1. GENERAL	1
2. DESCRIPTION OF APPARATUS	1
3. CIRCUIT CAPACITY OF 24A AUTOTRANSFORMER	2
4. INSTALLATION OF 24A AUTOTRANSFORMERS	2
5. WIRING OF APPARATUS	2
6. GROUND CONNECTION	4

1. GENERAL

1.01 This section covers the installation of the 24A Autotransformer and associated apparatus for use as an emergency link in restoring C- and J-type open wire carrier systems after storm breaks. This method may also be used to establish temporary facilities where required.

1.02 This section is reissued to delete information on HC Drop Wire and to add the use of C Rural Wire. Since this reissue covers a general revision, the arrows ordinarily used to indicate changes have been omitted.

2. DESCRIPTION OF APPARATUS

2.01 *The 24A Autotransformer* consists of a galvanized steel housing, approximately 3-3/4 by 7-1/2 by 9-1/4 inches and contains two identical groups of apparatus. Each group consists of a 23A Autotransformer, a 226A Capacitor, and a 267A Capacitor. Both groups are 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. A latch is provided to hold the cover in a raised position. A galvanized steel bracket is provided for mounting

the 24A Autotransformer on a single crossarm. Bridle wires and C Rural Wires are brought to the binding post strip through holes in the bottom of the housing. Corks for closing unused wire entrance holes are shipped with each new autotransformer. The 24A Autotransformer weighs about 15 pounds.

2.02 *The 524A Capacitor* consists of a galvanized steel housing about 2-7/8 by 5-1/4 by 8-3/16 inches and contains two 289A Capacitors that are terminated on four binding posts near the bottom of the housing. The housing cover is opened by gripping the sides near the bottom and pulling the cover out from the back of the housing. This releases the cover and permits it to swing down, thus giving access to the binding post strip. To close the cover, raise it up and insert the top inside the hood of the housing; the lower end of the cover is then forced toward the back of the housing until it snaps in place. The wire entrance holes in the bottom of the housing have temporary putty fillings. Each 524A Capacitor weighs about 8-3/4 pounds.

2.03 The internal connection of the 24A Autotransformer and the 524A Capacitor are shown in Fig. 1.

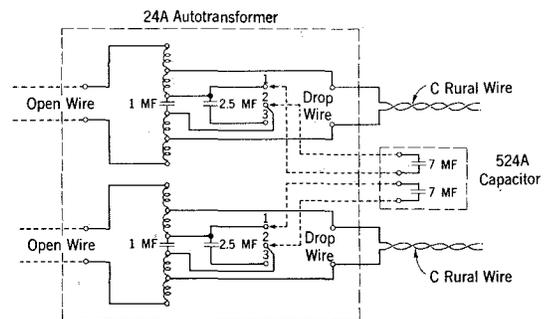


Fig. 1 – Internal Connections

3. CIRCUIT CAPACITY OF 24A AUTOTRANSFORMER

3.01 The 24A Autotransformer provides a means of connecting two open wire pairs to two pairs of C Rural Wire. The open wire pairs may be adjacent or separate pairs on the same or different crossarms. One half of the 24A Autotransformer may also be used to connect an open wire pair to one C Rural Wire, leaving the other half spare.

4. INSTALLATION OF 24A AUTOTRANSFORMERS

4.01 A typical installation of autotransformers with and without the auxiliary capacitor is shown in Fig. 2. When open wire cutout protection is specified, a 116C Protector should be installed as shown in Fig. 2B.

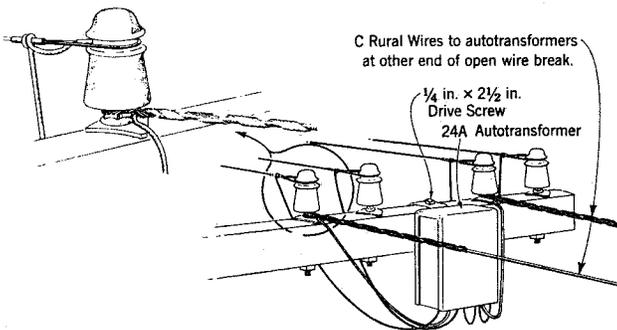


Fig. 2A - Without Auxiliary Capacitor

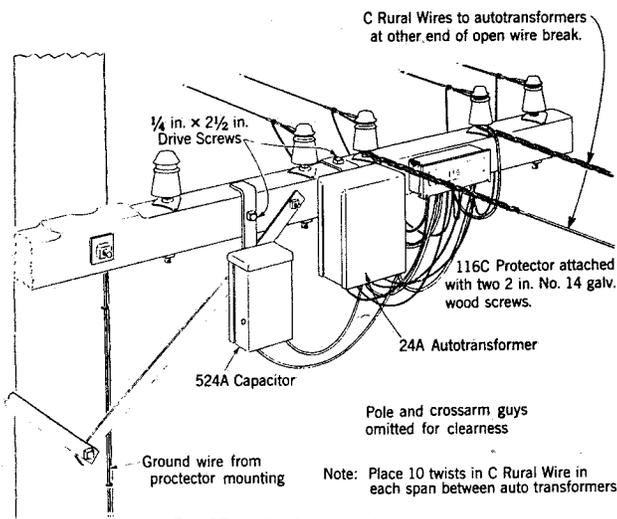


Fig. 2B - With Auxiliary Capacitor

Fig. 2 - Autotransformers Installed

4.02 After the wiring has been completed, unused wire entrance holes in the autotransformer housing should be sealed with corks installed from inside 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 are to be connected. Table A lists the type of circuit or service which may be assigned to the open wire pair and indicates the approximate wiring diagram to be used in each case. Consult the test-board or the supervisor in charge of the job for information on which wiring method is to be used for each open wire pair being equipped with autotransformers.

TABLE A - WIRING OF APPARATUS

TYPE OF CIRCUIT OR SERVICE ASSIGNED TO OPEN WIRE PAIR	WIRING DIAGRAM	
	WITHOUT 116C PROTECTOR	WITH 116C PROTECTOR
Program circuit — with metallic reversal circuit	Fig. 3A	Fig. 3B
One-way program circuit or grounded reversal circuit	Fig. 4A	Fig. 4B
Message circuit — 20-cycle ringing	Fig. 5A	Fig. 5B
Message circuit — 135-cycle ringing	Fig. 6A	Fig. 6B

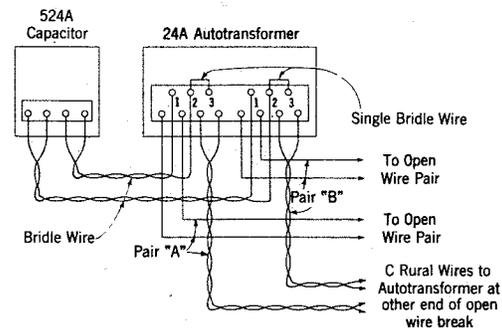


Fig. 3A - Without Protector

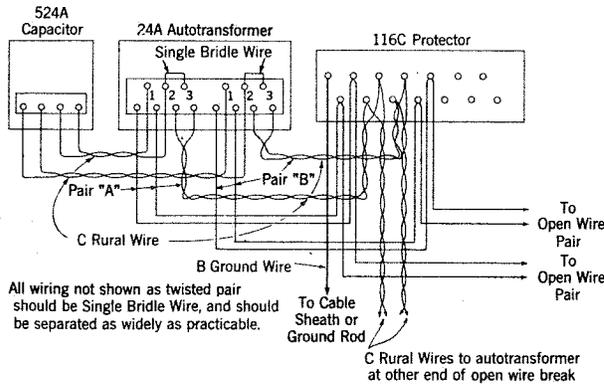


Fig. 3B - With 116C Protector

Fig. 3 - Program Circuit With Metallic Reversal Circuit

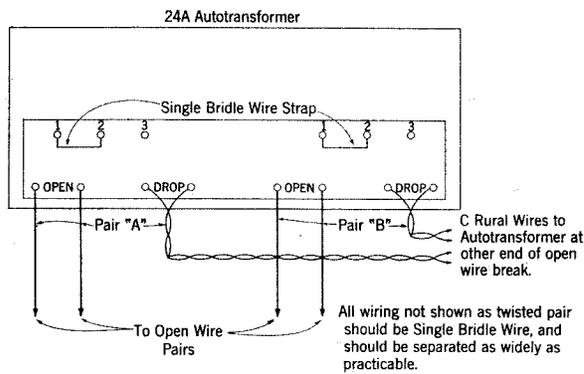


Fig. 4A - Without Protector

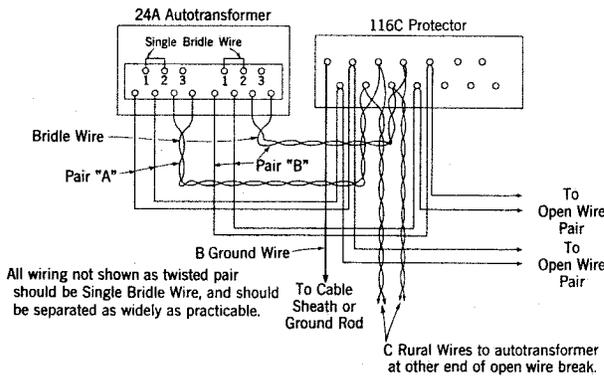


Fig. 4B - With 116C Protector

Fig. 4 - With One-way Program Circuit or Grounded Reversal Circuit

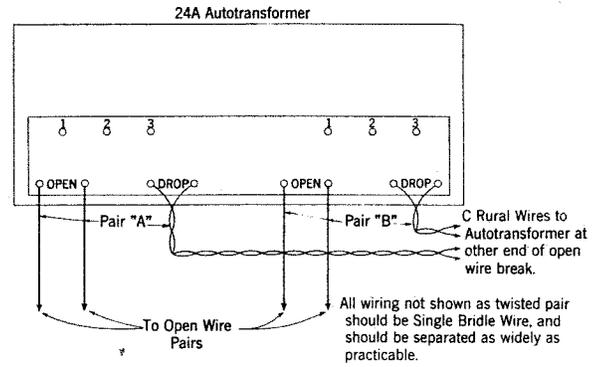


Fig. 5A - Without Protector

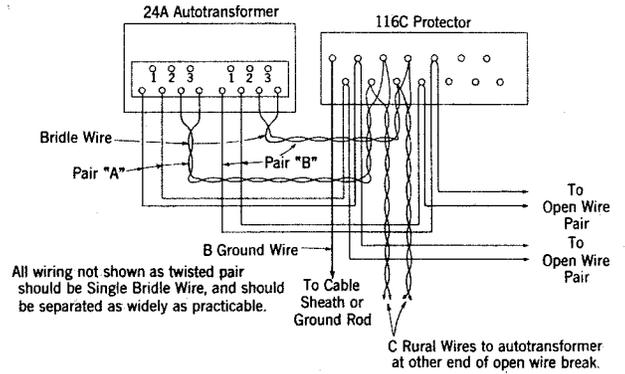


Fig. 5B - With 116C Protector

Fig. 5 - Message Circuit - 20-Cycle Ringing

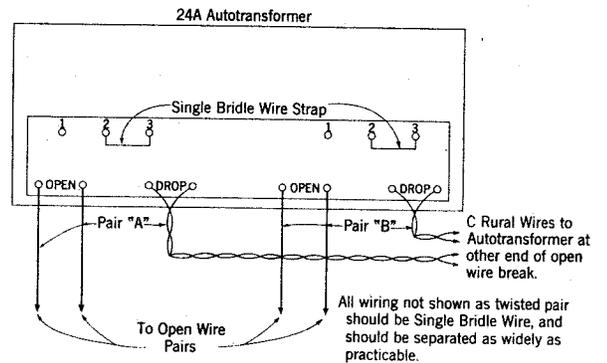


Fig. 6A - Without Protector

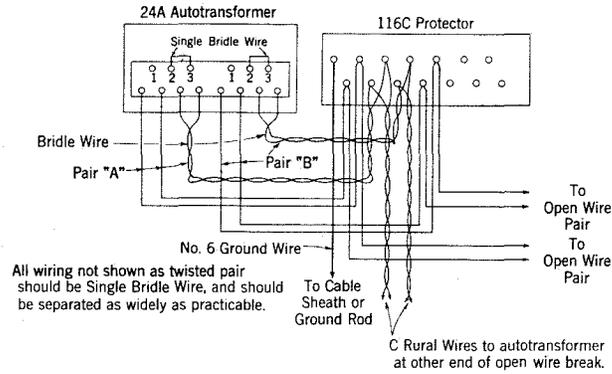


Fig. 6B – With 116C Protector

Fig. 6 – Message Circuit – 135-Cycle Ringing

6. GROUND CONNECTION

6.01 The ground post of the 116C Protector should be connected to the cable sheath if available; otherwise, it should be connected to a ground rod with B Ground Wire.