

## Chapter 22

## TRANSFORMER, ENGLISH ELECTRIC, TYPE AE 5709

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## LEADING PARTICULARS

<i>Transformer, E.E. Type AE 5709</i> ... ..	<i>Ref. No. 5UB/6828</i>
<i>Type of winding</i> ... ..	<i>Three-phase, double-wound</i>
<i>Input voltage</i> ... ..	<i>200 volts</i>
<i>Input frequency</i> ... ..	<i>400 c/s</i>
<i>Output voltage</i> ... ..	<i>115 volts</i>
<i>Output (power)</i> ... ..	<i>250 VA</i>
<i>Rating</i> ... ..	<i>Continuous</i>
<i>Resistance of each primary winding</i> ... ..	<i>3.58 ohms <math>\pm 10\%</math> at 20° C</i>
<i>Resistance of each secondary winding</i> ... ..	<i>0.595 ohms <math>\pm 10\%</math> at 20° C</i>
<i>Operating altitude</i> ... ..	<i>0-36,000 feet</i>
<i>Dimensions</i>	
<i>Overall height</i> ... ..	<i>4<math>\frac{1}{8}</math> in.</i>
<i>Overall length (inclusive of mounting lugs)</i> ... ..	<i>5<math>\frac{5}{8}</math> in.</i>
<i>Overall width</i> ... ..	<i>3<math>\frac{3}{16}</math> in.</i>
<i>Weight</i> ... ..	<i>... 2 lb. 11 oz.</i>

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### Introduction

1. The Type AE 5709 transformer (*fig. 1*) is a three-phase double-wound, naturally cooled transformer. It is rated to supply a load of 250 VA of unity power factor at 115-volts, when the primary is supplied with 200-volts at 400 c/s.

### DESCRIPTION

#### General

2. The transformer consists of primary and secondary windings assembled on a core and this assembly is clamped between two sets of brackets. One set of which is manufactured to provide lugs for mounting purposes and tapped holes to accept the cover securing bolts. The cover is shaped to provide a mounting flange for a terminal block and is perforated to allow for cooling of the windings.

#### Terminal block connections

3. The ends of the windings are brought out to the terminal block mounted on the flange at the top and to the rear of the transformer. The terminals are screw type and are identified by numbered letters on the nameplate; reading from left to right they are A1, B1 and C1 for the primary windings and A2, B2 and C2 for the secondary.

### INSTALLATION

4. The transformer must be mounted with the face adjacent to the terminal block uppermost and can be secured in position by four 2 B.A. screws or bolts using the four mounting lugs.

### SERVICING

5. The terminal block and cover of the transformer should be examined for signs of

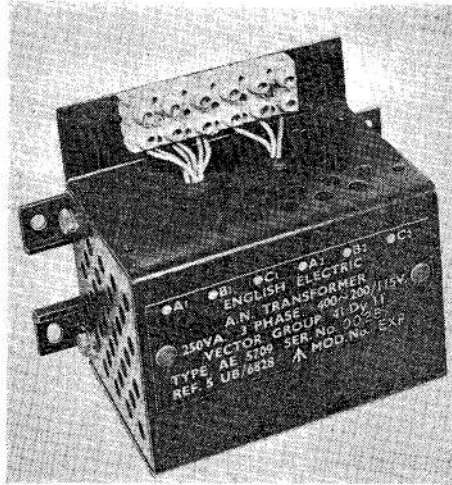


Fig. 1. Transformer, E.E. Type AE 5709

damage and the windings inspected for signs of overheating. To examine the windings, disconnect them from the terminal block, remove the four cover securing bolts (two at either end of the transformer) and remove the cover, carefully withdrawing the ends of the windings through the grommets. During assembly, which can be carried out in the reverse order, ensure that the windings are correctly reconnected to the terminal block.

### TESTING

#### Insulation test

6. Check, using a 500-volt insulation resistance tester, the insulation resistance between the windings and between each winding and the frame. The minimum permissible reading at each check is 5 megohms.

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