Chapter 16

TRANSFORMER, ENGLISH ELECTRIC, TYPE A.C.T.1

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LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Type of winding	*3-phase, star connected, auto*
Input	208 *V.*, 3-*ph.*, 400 *c/s* 28·6 *A.*
Output	166 *V.*, 3-*ph.*, 400 *c/s* 35·9 *A.*
Rating...	10·3 *kVA.*
Temperature range	−40 *deg. to* +10 *deg. C.*
Weight	7 *lb.* (*approx.*)

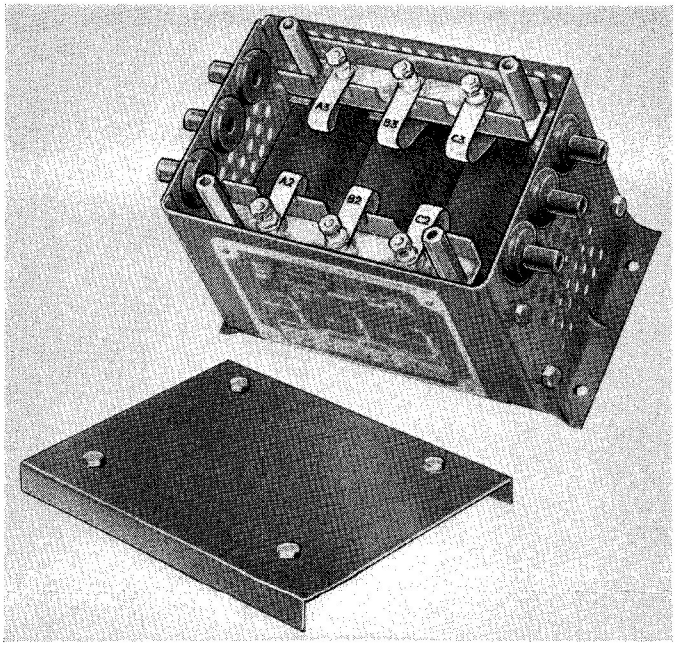

Fig. 1. Transformer, Type A.C.T. 1

Introduction

1. The A.C.T. 1 transformer is used on Britannia aircraft to step down the 208 V., 3-phase supply to provide 160 V. for the continuously heated elements of the tail de-icing system. The transformer is designed to be used in the pressurized fuselage and will supply its rated output continuously at ambient temperatures between −40 deg. C. and +10 deg. C. at air pressures equivalent to 9000 ft. or less. It can be continuously energized on no load between −40 deg. C. and +25 deg. C. at the same air pressure.

Description

2. The insulation of the transformer is woven-glass based and the coils are vacuum impregnated with silicone varnish. The complete core, coil and terminal assembly are enveloped in silicone varnish to afford protection from atmospheric moisture. A perforated metal surround and cover provide mechanical protection for the transformer and also prevent personnel touching hot or live parts of the assembly. The detachable cover is secured by four captive bolts and locking washers and provides access to the transformer terminals.

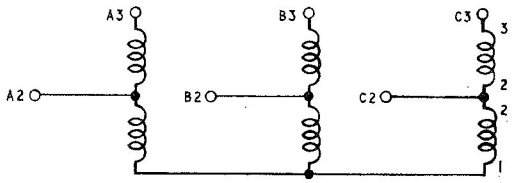

Fig. 2. Circuit diagram

Installation

3. The transformer should be mounted on a fore and aft vertical surface with its rating plate vertical and at least 1 in. away from other equipment to allow a free flow of cooling air. The aircraft cables should be fitted with Helsyn tension grommets (size 3) and 2 B.A. tinned cable lugs. After removal of the cover, the cables should be threaded through the $\frac{3}{4}$ in. diameter holes in the ends of the case and the lugs placed on the terminal studs in direct contact with the connections from the transformer coils. The 208 volt input leads being put on the terminals marked A3, B3 and C3 respectively and the output leads on the A2, B2 and C2 terminals.

4. The tension grommets should then be pulled into position in the case using a strong piece of twine. The terminal lugs should next be secured in contact with the coil connections using the phosphor-bronze locking washer and the 2 B.A. tinned brass lock nuts which are supplied with the transformer. The cover should then be replaced and secured with the captive bolts and locking washers.

Servicing

5. Routine servicing consists mainly of examining the transformer for security of its mounting and terminal connections and removing any accumulated dust by means of a jet of dry air. Unserviceable transformers should be returned through stores for repair.

6. The insulation resistance between the transformer windings and earth, measured with a 500-volt insulation resistance tester, should not be less than 5 megohms.

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