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**Chapter 9**

**PHASE CORRECTION UNITS, ROTAX, TYPE ZA7600 SERIES**

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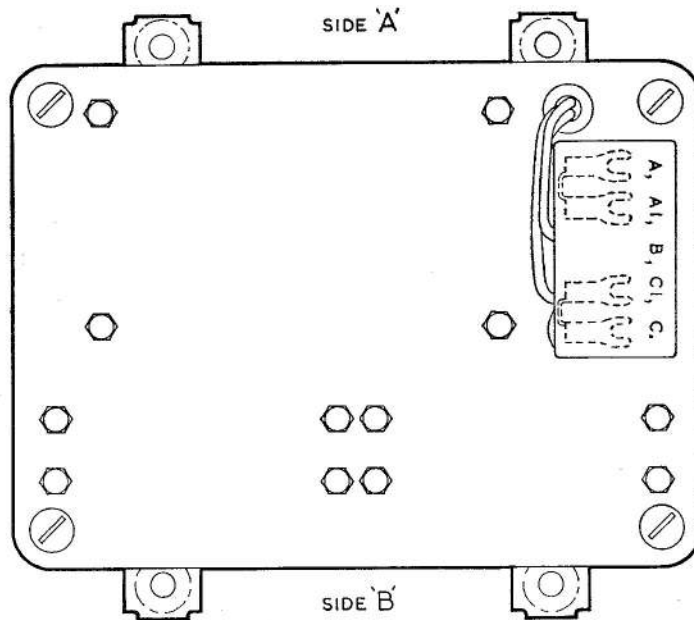


Fig. 1. Typical phase correction unit

#### Introduction

1. Phase correction units in the ZA7600 series enable a specified single-phase load to be supplied from a three-phase system, without the balance of the system being disturbed. Details of particular types will be found in Appendices to this chapter.

#### DESCRIPTION

2. A typical unit is illustrated in fig. 1. It comprises two inductors and an  $8.3 \mu\text{F}$  ( $\pm 10$  per cent) capacitor suitably interconnected and mounted within an aluminium case. The case has two mounting flanges and a removable cover. A five-way terminal block is mounted on the case.

#### Rating

3. When connected to a 3-phase, 115-volt, 400 c/s supply, the unit is continuously rated to balance a single-phase load of:—

540 VA, 0.866 power factor lagging  
(468 watts), 115-volts, 400 c/s

Under these conditions the input power factor will be 0.866 lagging.

#### Electrical connections

4. Electrical connections are made via a 5-way S.B.A.C. terminal block. The three-

phase input terminals are marked A, B, and C. The single-phase output terminals are marked A1 and C1. The unit is sensitive to phase-sequence. The sequence A, B, and C, must be maintained when connecting to the three phase supply. The unit should only be connected to the three-phase supply when the specified single-phase load is connected to the unit output terminals A1 and C1.

#### Note . . .

*It is essential in a system where this unit is employed, that switching (if any) shall be in the supply side and NOT BETWEEN UNIT AND LOAD.*

#### INSTALLATION

5. The unit should be mounted vertically with side 'A' or 'B' (fig. 1), uppermost to allow cooling air to circulate.

#### SERVICING

6. The unit should be inspected for freedom from damage and security of electrical connections. Details of tests applicable to a particular unit will be found in the relevant Appendix.

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## Appendix 1

## PHASE CORRECTION UNIT, ROTAX, TYPE ZA7601

## LEADING PARTICULARS

Phase correction unit, Type ZA7601	...	...	Ref. No. 5UC/6483
Input (terminals A, B, and C)	...	...	115V, 400 c/s
Output (terminals A1 and C1)	...	115V, 540VA, 0.866 p.f. (lagging)	
Cooling	...	...	Natural
Ambient temperature range	...	...	-40 deg. C to +50 deg. C
Altitude	...	...	40,000 ft.
Overall dimensions—			
Height...	...	...	4.218 in.
Length...	...	...	6.906 in.
Width (over lugs)	...	...	5.999 in.
Weight	...	...	4 lb. 7½ oz.

1. The ZA7601 unit is identical to that described and illustrated in the main chapter.

**Load test**

2. With a three-phase, 400 c/s supply of phase sequence R, Y, B connected to terminals A, B, and C respectively and the mean line voltage set to 115V, a load of 540 VA at 0.866 p.f. (468W, 115V) should be connected to terminals A1 and C1. The mean input line current should be between 2.95 and 2.8 amp. Individual line currents should not exceed  $\pm 7.5$  per cent of the mean value.

**Insulation test**

3. The insulation resistance between terminals A and B together and the frame when measured with a 500-volt insulation resistance tester should not be less than 50,000 ohms.

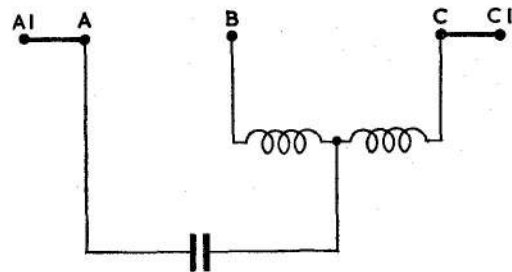


Fig. 1. Diagram of internal connections

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## Appendix 2

### PHASE CORRECTION UNIT, ROTAX, TYPE ZA7603

#### LEADING PARTICULARS

Phase correction unit, Type ZA7603	...	...	...	...	Ref. No. 5UC/
Input (terminals A, B, and C)	...	...	...	...	115V, 400 c/s
Output (terminals C1 and B1)	...	115V, 540VA,	0.866 p.f. (lagging)		
Cooling	...	...	...	...	Natural
Ambient temperature range	...	...	-40 deg. C to +50 deg. C		
Altitude	...	...	...	...	40,000 ft.
Overall dimensions—					
Height	...	...	...	...	4.218 in.
Length	...	...	...	...	6.906 in.
Width (over lugs)	...	...	...	...	5.999 in.
Weight	...	...	...	...	4 lb. 7½ oz.

1. The ZA7603 unit is identical to that described and illustrated in the main chapter except for the terminal block markings, the input terminals being A, B, and C, and the output terminals C1 and B1 respectively (fig. 1).

#### Load test

2. With a three-phase, 400 c/s supply of phase sequence R, Y, B connected to terminals A, B, and C respectively and the mean line voltage set to 115-volts, a load of 540VA at 0.866 p.f. (468 watts, 115-volts) should be connected to terminals C1 and B1. The mean input line current should be between 2.95 and 2.8 amp. Individual input line currents should not exceed  $\pm 7.5$  per cent of the mean value.

#### Insulation resistance test

3. The insulation resistance between terminals C and A together and the frame when measured with a 500-volt insulation resistance tester should not be less than 50,000 ohms.

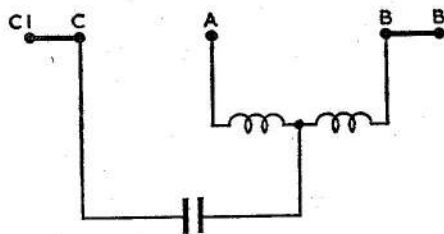


Fig. 1. Diagram of internal connections

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