

Chapter 13

(This chapter supersedes that issued with A.L.s 7 and 118)

CONTROL PANEL, TYPE 12

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LEADING PARTICULARS

Control panel, Type 12	...	Stores Ref. SUC/4939
Input	...	25-28 volts d.c.
Output (when used with rotary inverter, Type 100A)		
		150 watts, 0.8 p.f., 3-phase a.c.
		115 volts, 400 c/s (nominal value)
		110—120 volts } (for testing over
		380—400 c/s } input range)
Weight	...	5 lb.
Voltage regulator (incorporated) Type 54	...	Stores Ref. SUC/4952
Used with rotary inverter, Type 100A	...	Stores Ref. SUB/4938

Introduction

1. The control panel, Type 12, is used to regulate the output of the rotary inverter, Type 100A, which is described in Sect. 16 of this publication. The inverter may be mounted directly on the control panel, four fixing holes being provided on the latter for this purpose, as indicated in fig. 2; there are four possible mounting positions, one of which is shown in fig. 1. Alternatively, the inverter may be mounted remote from the control panel, to suit an individual installation; connection is made in each case by the connecting plug shown in fig. 1 and a corresponding plug on the inverter. A circuit

diagram of the control panel used in conjunction with the inverter is given in fig. 4.

DESCRIPTION

2. The control panel (fig. 2) incorporates two main castings secured together; one houses a voltage regulator, and the other (shown with the base cover removed in fig. 3) contains a rectifier, suppressor, and terminal block. Access to the 8-way terminal block is gained by removal of the base plate; there is in addition an earth terminal, which may either be earthed to the case, or taken through a plug situated alongside the d.c. input plug to a remote earth.

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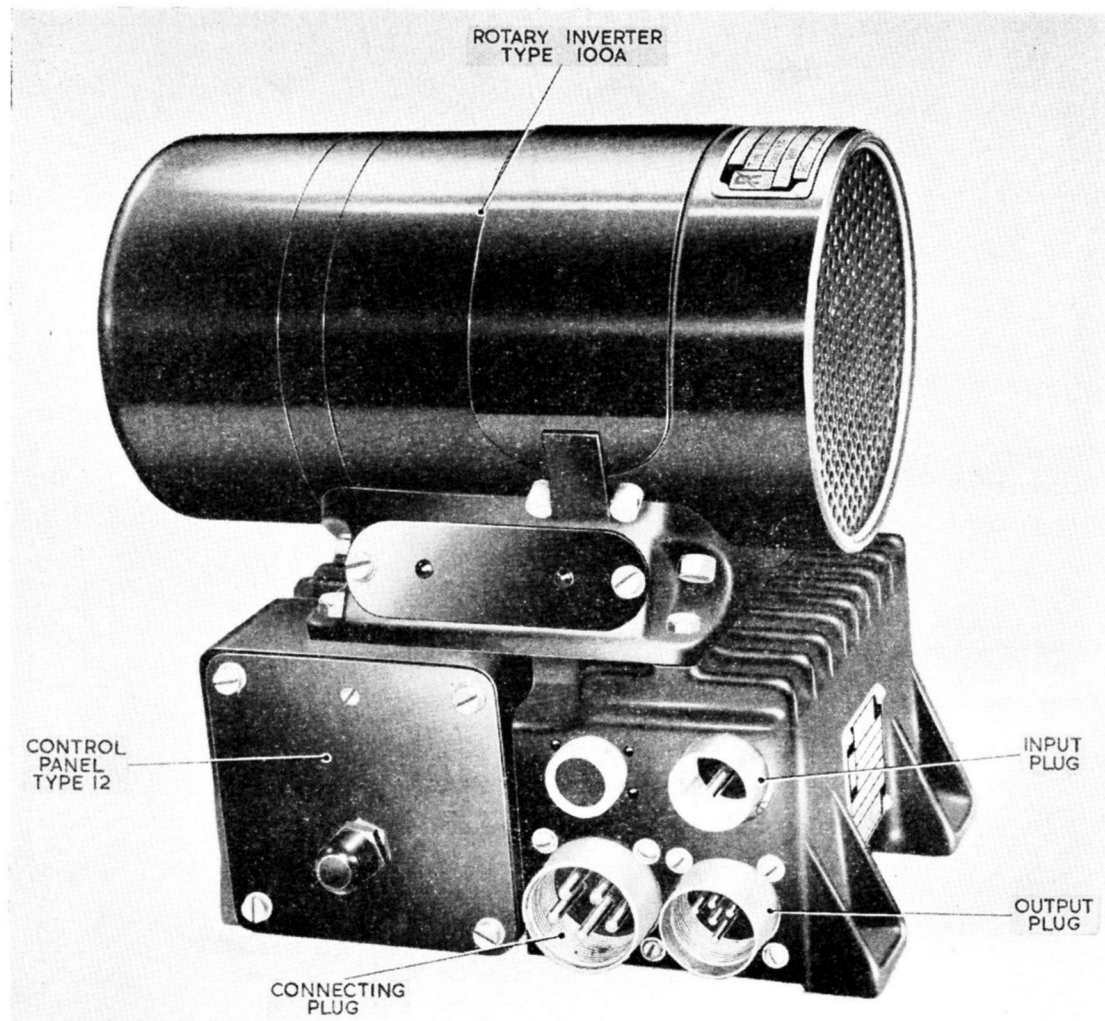


Fig. 1. Control panel, Type 12, with rotary inverter, Type 100A

3. The two-stage suppressor is connected in series with the d.c. input, whence the supply passes through the carbon pile of the voltage regulator to the inverter unit. The a.c. supply from the inverter then re-enters the control panel where it is rectified to energize the operating coil of the regulator; 3-phase a.c. leaves the panel by pins A, B, and C of the 5-pin output plug, the remaining pins D and E being the d.c. output.

Voltage regulator

4. The voltage regulator, Type 54, is of the series carbon pile type, and is fitted with a pile unit (Stores Ref. 5UC/2162) consisting of thirteen 3-mm. washers. The regulator maintains a substantially constant inverter

output voltage and frequency, with an input varying between 25 and 28 volts d.c. A description of this regulator will be found in Sect. 1 of this publication.

5. Adjustment of the magnet core is made by means of the screw shown in fig. 2. The trimmer resistor, which is slotted for screw-driver operation, is brought out at the opposite side of the regulator, and so enables small voltage adjustments to be made without any dismantling.

Connections

6. All the electrical connections to the control panel are taken to the side on which the trimmer adjuster is fitted. The d.c. input is

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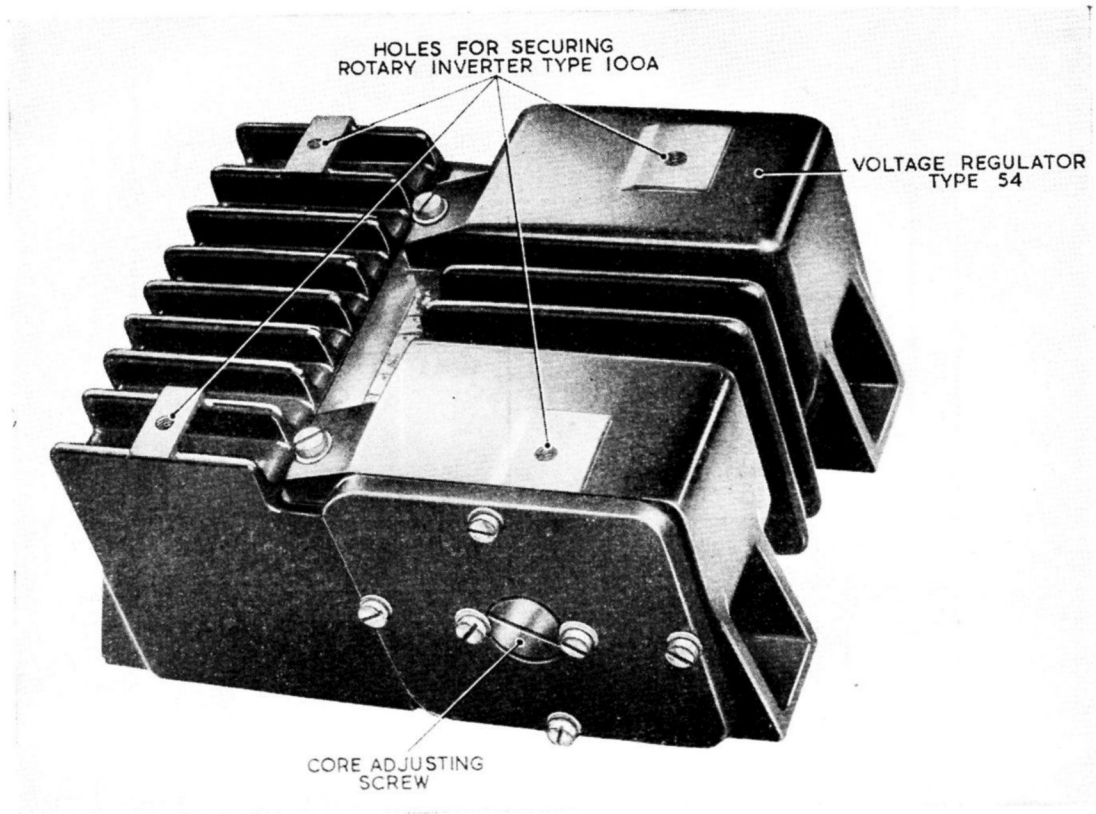


Fig. 2. Control panel, Type 12

through the 1-pin plug at the top, while underneath it is located the output plug, the pins A, B, and C of which provide the 3-phase a.c. output, and the pins D and E the d.c. output. The other 5-pin plug is for making the connection to the inverter, Type 100A, and above it is located the optional earth connection.

SERVICING

7. Little servicing should be required for this control panel. Adjusting and testing of the voltage regulator, Type 54, in conjunction with the inverter, Type 100A, is covered in Sect. 1 of this publication.

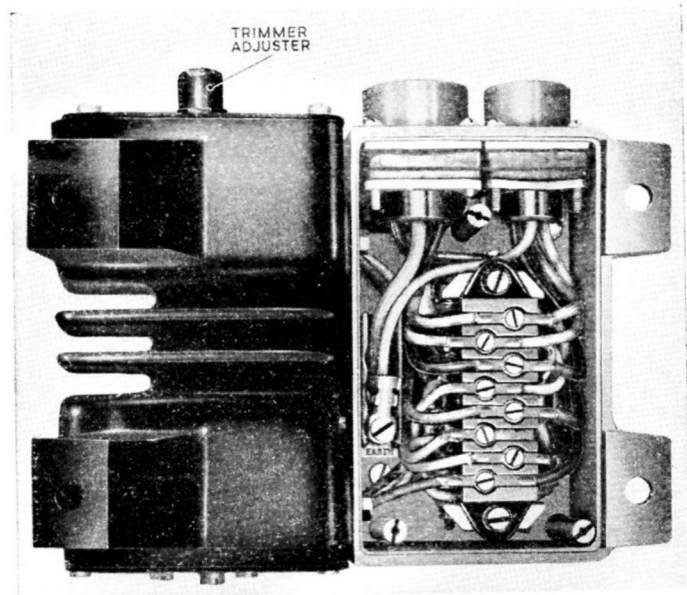


Fig. 3. View of underside of control panel

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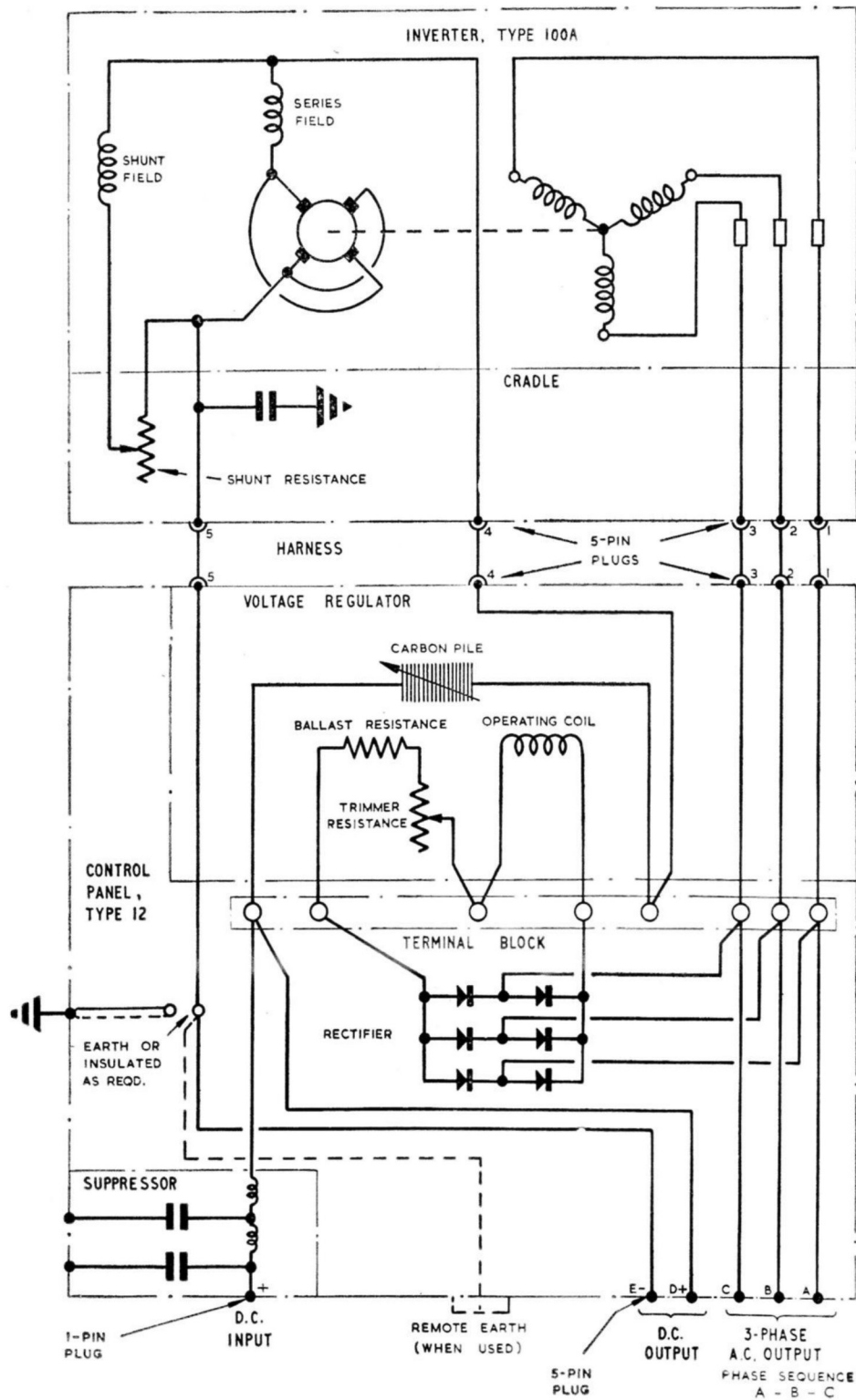


Fig. 4. Circuit diagram

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