

Chapter 23

**INDICATOR, ELECTRO-MAGNETIC, PLESSEY,
THREE-POSITION, RECTANGULAR TYPE**

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LEADING PARTICULARS

<i>Operating voltage</i>	18-28.5V. d.c.
<i>Power consumption (at 24V.)</i>	1 watt
<i>Rating</i>	continuous
<i>Coil resistance</i>	525 ± 50 ohms
<i>Ref. No.</i>	see table
<i>Indication</i>	see table

Part No.	Mk.	Ref. No.	Indication		
			+ve to terminal 2	supply off	+ve to terminal 3
CZ 97636/1	5	5CZ/4827	"OPEN" (green)	—(amber)	—"SHUT" (red)
CZ 97636/2	5	5CZ/5085	"OPEN" (red)	—(amber)	—"SHUT" (green)
CZ 97636/4	5	5CZ/5449	"OFF" (red)	—(amber)	—"ON" (green)
7CZ 97135/55	4	5CZ/5639	"MAIN" (green)	—(red)	—"STBY" (yellow)

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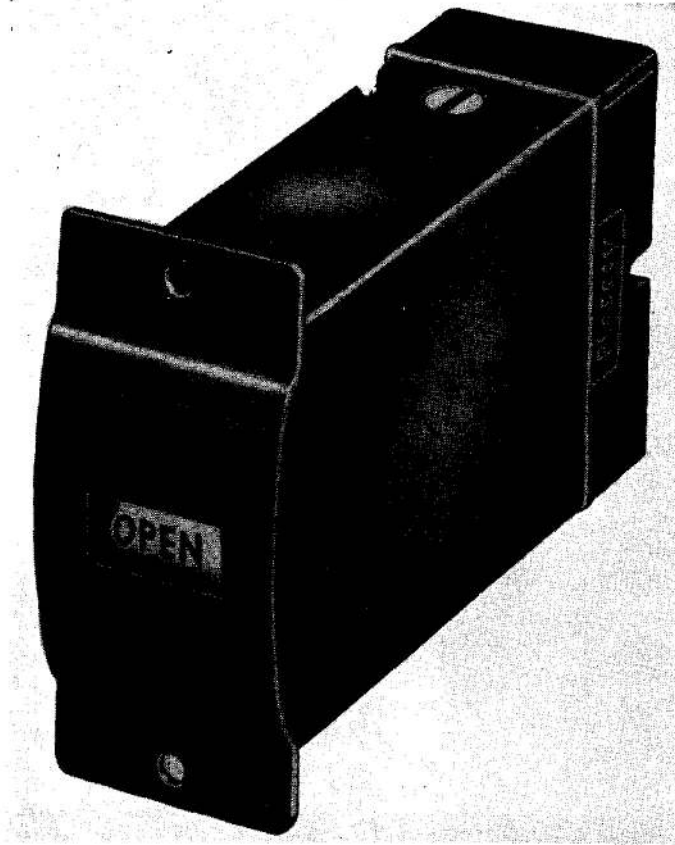


Fig. 1. *General View of rectangular type magnetic Indicator*

Introduction

1. These magnetic indicators (*fig. 1*) are 3-position types which are used to indicate visually the positions of actuators, valves, flaps, or other moving components remote from the control points. An advantage of this type of remote indication is that a failure in the associated circuit is signalled by the indicator returning to the neutral position.
2. The types described in this Chapter differ only in their signal codes and in the case sizes. The signal code alters the suffix number (Leading Particulars); different case sizes are indicated by different Type numbers (*viz.*, Types CZ97636 and 7CZ 97135 have 1.6 in. and 1.4 in. fixing centres respectively).

DESCRIPTION

General

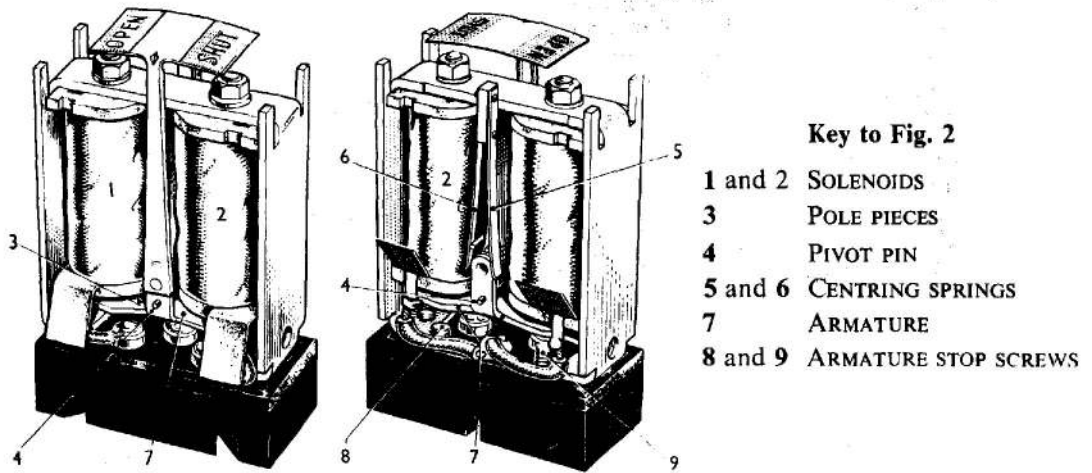
3. The construction of the indicator can be seen clearly from the internal views in *fig. 2*

and the general view in *fig. 1*. The indicator contains two solenoids and a pivoted armature to which is secured the flag; the armature is biased to the central position by means of a pair of centring springs. These components are mounted on an insulated base plate and enclosed by a cover which is secured to the base plate by two screws. The connections from the solenoid coils are soldered to screw terminals in the base.

OPERATION

4. The solenoids are energized independently by applying a voltage between terminals 3 and 1 or between 2 and 1. When a solenoid is energized, one side of the armature is attracted towards the pole piece causing the flag to move across until one or other of the legends (*e.g.* OPEN or SHUT) is visible through the window in the case.

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Key to Fig. 2

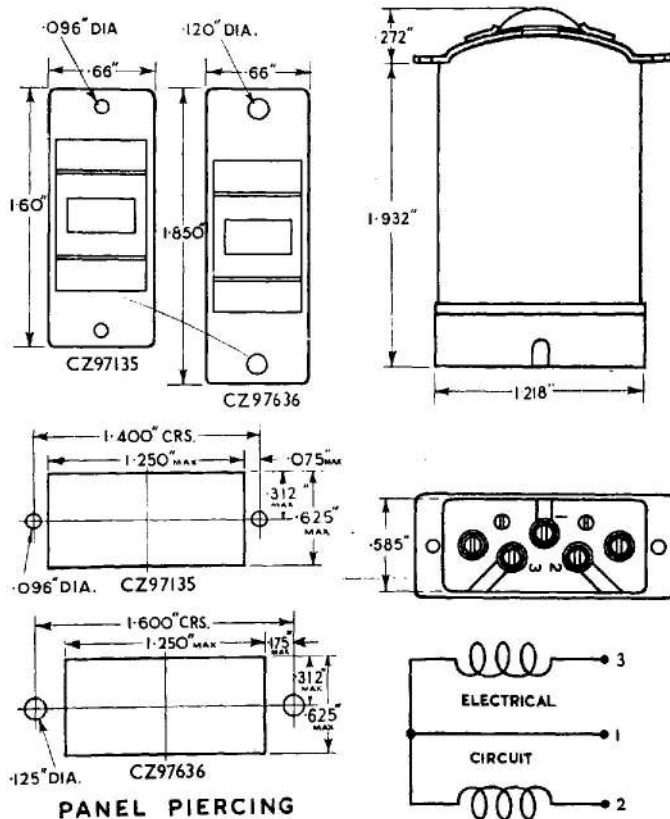
- 1 and 2 SOLENOIDS
- 3 POLE PIECES
- 4 PIVOT PIN
- 5 and 6 CENTRING SPRINGS
- 7 ARMATURE
- 8 and 9 ARMATURE STOP SCREWS

Fig. 2. Construction of Indicator

5. When neither solenoid is energized, the armature centring springs return the flag to its mid position, thus providing a positive indication that the supply is off.

INSTALLATION

6. The indicator is a sealed unit and the case must not be removed to check the coding.



PANEL PIERCING

Fig. 3. Circuit diagram and installation details

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7. Before mounting the unit, check for satisfactory operation by applying 24V. d.c. across each pair of terminals and observing that the resulting indications are correct. The terminal numbers (which are moulded in the indicator base) are identified in the table under Leading Particulars.

8. After testing, mount the indicator on its panel and connect the negative supply lead to terminal 1 and the positive leads to terminals 2 and 3 as directed in the table under Leading Particulars.

SERVICING

General

9. No periodic servicing is necessary apart from checking the security of the fixing screws and terminal screws. If faulty operation of the indicator is suspected, carry out the checks in para. 7.

Insulation resistance check

10. The insulation resistance between terminal 1 and earth (viz., the screw on the side of the case) should be greater than 20 megohms.

Resistance check

11. The resistance of each solenoid coil (i.e. between terminals 1 and 2 and between 1 and 3) should be 525 ± 50 ohms.

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