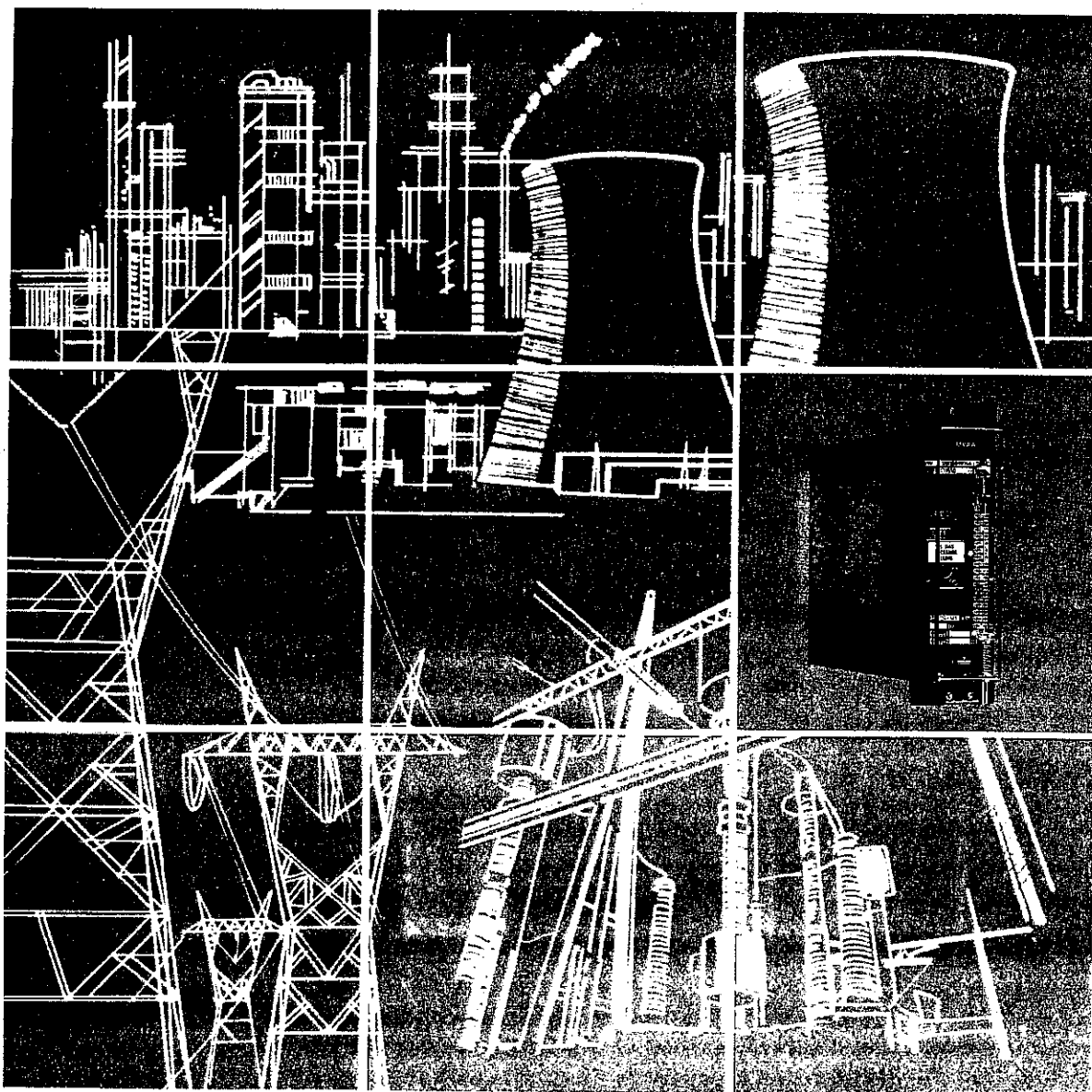


Type MVAA Auxiliary Relays



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Type MVAA Auxiliary Relays

Features

- Compact design
- Mechanically stable
- Hand, self and electrically reset versions available
- Wide voltage range
- Optional operation indicator

Models Available

There are five versions of the MVAA relay, each with a different type of contact reset mechanism.

MVAA 11

Single element relay with self reset contacts.

Two element version is type MVAA 21

MVAA 12

Single element relay with a combination of self and hand reset contacts.

Two element version is type MVAA 22

MVAA13

Single element relay with hand reset contacts.

Two element version is type MVAA 23

MVAA 14

Single element relay with electrical reset contacts

MVAA 15

Single element relay with hand and electrical reset contacts. The contacts can be reset either electrically or by hand

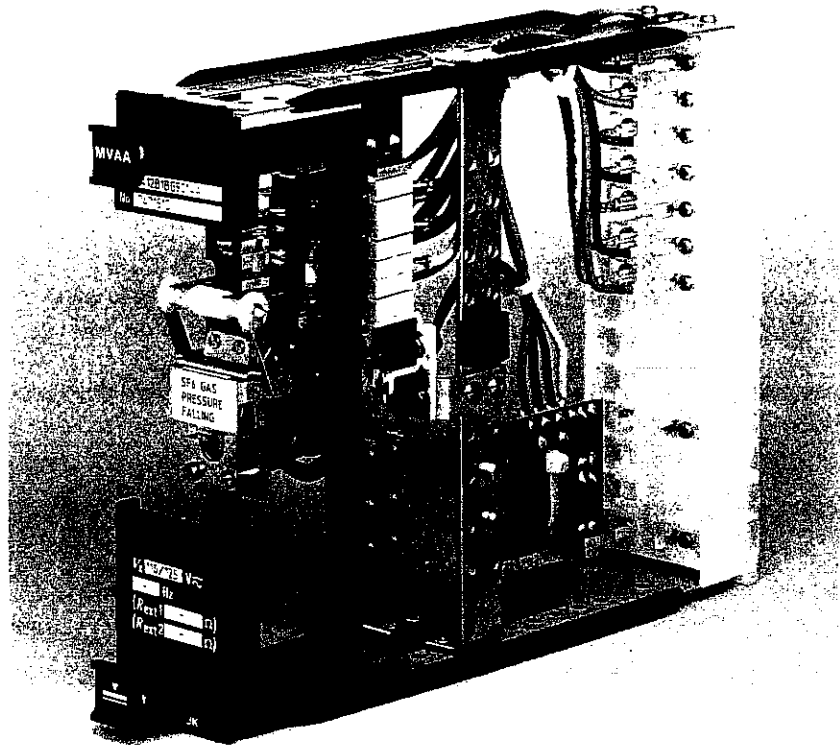


Figure 1: Type MVAA relay withdrawn from case

Application

The type MVAA is a low burden auxiliary relay which can be used where a scheme demands several contacts for event recording, alarm initiation, contact logic arrangements, etc

The relay can be supplied fitted with normal duty contacts and/or with heavy duty blow-out contacts.

Description

MVAA relays are voltage operated attracted armature units of compact design with a positive action and a high degree of mechanical stability. Voltage is applied to the relay coils via an internal diode bridge which enables relays to be energised from ac or dc power supplied. All relays comply with IEC 255.

Figures 2 and 3 show typical diagrams of relay types MVAA 11 and MVAA 14 respectively.

Contacts

Contacts are constructed from silver/copper alloy, shaped and positioned to ensure very reliable, low resistance operation.

Normal duty make, break and changeover contacts and heavy duty magnetic blow-out contacts are available in various combinations. See Tables 1, 2 and 3.

Heavy duty magnetic blow-out contacts are recommended for breaking heavy or highly inductive dc loads. When these are fitted, the number of contacts available may be reduced. See Table 3.

Breaking capacity curves for these contacts are shown in Figure 4.

Operation Indicators

Each relay element is supplied with an optional hand reset operation indicator. The indicator consists of a mask which on operation drops to expose a broad red strip positioned diagonally on a rectangular white background.

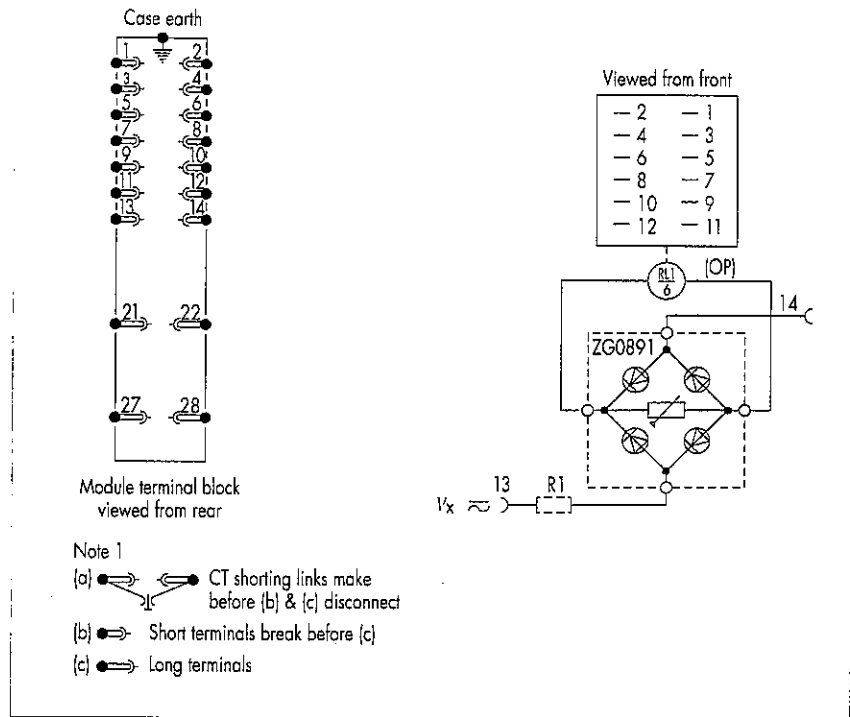


Figure 2: Circuit diagram: MVAA 11 (self reset contacts) ac or dc

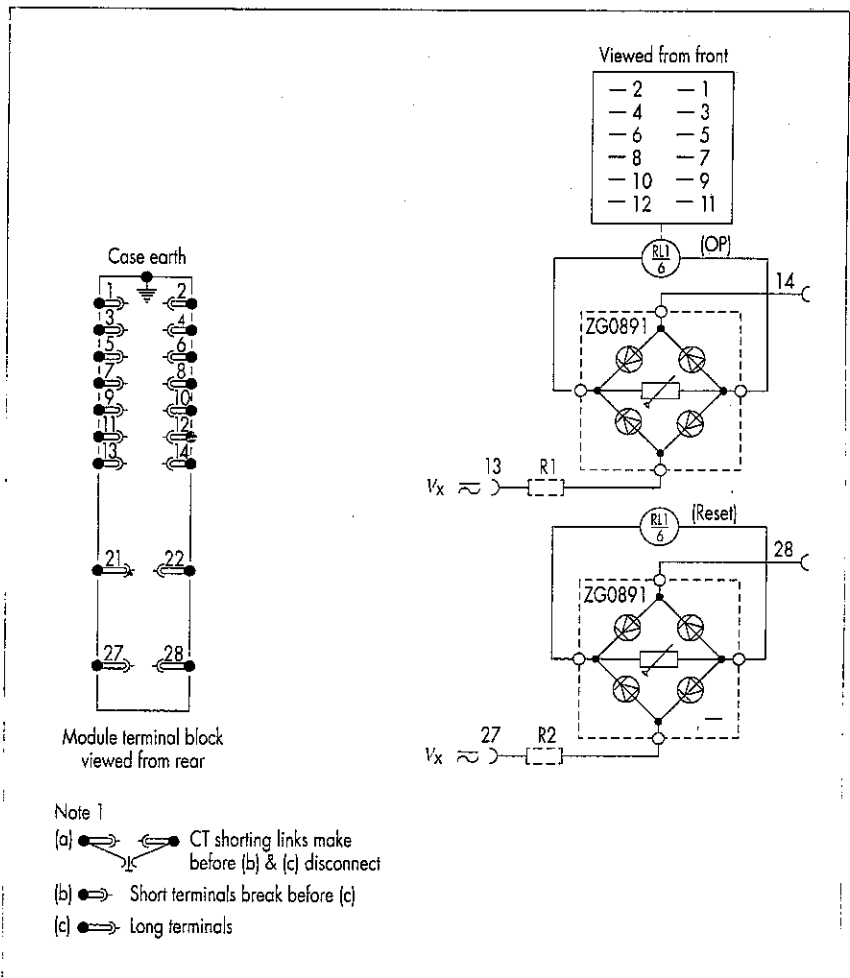


Figure 3: Circuit diagram: MVAA 14 (electrical reset contacts) ac or dc

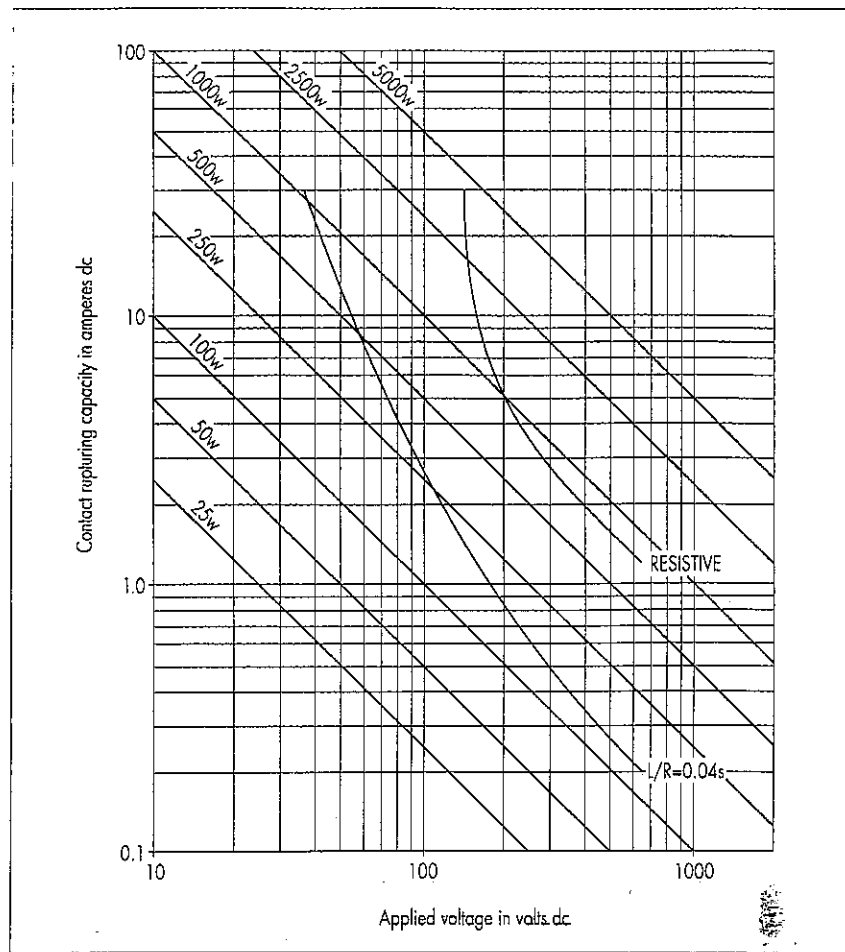


Figure 4: Curves of breaking capacity of heavy duty blow-out contacts

Technical Data

Ratings

Standard coil ratings

24/27V, 30/34V, 48/54V,
110/125V, 220/250V, ac or dc

Operative ranges

Voltage rating	Operative voltage range
24/27V	19.2 - 32.4V
30/34V	24.0 - 40.8V
48/54V	38.4 - 64.8V
110/125V	88.0 - 150.0V
220/250V	176.0 - 300.0V

Frequency

50/60Hz

Withstand rating

The relay will withstand 120% of its maximum voltage rating continuously.

Burdens

3W per element at all rated voltages.

Operating times

The operating times are typically 12-25ms depending on the number of contacts and relay type.

Contact combinations

Relay type	Contact combination code letter (cross reference to detailed contact combinations in Table 3)	Case size
MVAA11	Q	2
	R	4
MVAA12	S	2
MVAA13*	Q	2
	R	4
MVAA14*	Q	2
	R	4
MVAA15*	Q	2
	R	4

Table 1: Available contact combinations and case size for single element relays

Relay type	Contact combination code letter (cross reference to detailed contact combinations in Table 3)		Case size
	Element 1	Element 2	
MVAA21	P	P	2
	Q	Q	4
MVAA22	S	S	4
MVAA23*	Q	Q	4

Table 2: Available contact combinations and case size for dual element relays

*NOTE:

When these relays are required to cut-off their own supply voltage following operation, a special late acting contact must be used. This contact can be fitted on request and will be wired internally. The number of available output contacts shown in Table 3 reduces by one when a cut-off contact is supplied.

Contact combinations

Contact combination code letter	Normal duty in any combination of make (M) or break (B)	Normal duty changeover	Heavy duty in any combination of make (Z) or break (Y)
P	4	-	-
Q	6	-	-
	3	-	2
	1	-	3
	-	4	-
R	8	-	-
	4	-	4
	2	-	6
	-	6	-
S	6(2-HR and 4-SR, or 2-SR and 4-HR)	-	-
where	SR = self reset HR = hand reset		

Table 3: Contact combinations cross reference table

Contact ratings

Contact type	Current	Make and carry continuously	Make and carry for 3 seconds	Break
	AC	1250VA with maxima of 5A and 300V	7500VA with maxima of 30A and 300V	1250VA with maxima of 5A and 300V
Standard make or break or changeover	DC	1250W with maxima of 5A and 300V	7500W with maxima of 30A and 300V	100W(resistive) 50W (inductive) with maxima of 5A and 300V
Heavy Duty	DC	1250W with maxima of 5A and 300V	7500W with maxima of 30A and 300V	see curves

Maximum rate of operation, 600 per hour.

Durability

Loaded contact	10,000 operations minimum
Unloaded contact	100,000 operations minimum

High voltage withstand

Dielectric withstand IEC 255-5: 1977	2kV rms for 1 minute between all terminals and case earth. 2kV rms for 1 minute between terminals of independent circuits including contact circuits, with terminals on each independent circuit connected together. 1kV rms for 1 minute across open contacts of output relays.
High voltage impulse IEC 255-5: 1977	Three positive and three negative impulses of 5kV peak, 1.2/50 μ s, 0.5J between all terminals of the same circuit, between independent circuits, and between all terminals connected together and case earth.

Electrical environment

EMC compliance 89/336/EEC	Compliance with the European Commission Directive on EMC is claimed via the Technical Construction File route.
EN 50081-2: 1994 EN 50082-2: 1995	Generic Standards were used to establish conformity.

Product safety

CE 72//23/EEC	Compliance with European Commission Low Voltage Directive
EN 61010-1:1993/A2:1995 EN 60950:1992/A3:1995	Compliance is demonstrated by reference to generic safety standards.

Atmospheric environment

Temperature IEC 255-6: 1988	Storage and transit -25°C to +70°C Operation -25°C to +55°C
IEC 68-2-1: 1990 IEC 68-2-2: 1974	Cold Dry heat
Humidity IEC 68-2-3: 1969	56 days at 93% RH and 40°C
Enclosure protection IEC 529: 1989	IP50 (dust protected)

Mechanical environment

Vibration IEC 255-21-1: 1988	Response class 2
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Cases

Relays are supplied in size 2 or size 4 cases as indicated in the Technical Data section. See Figures 5 and 6 for outline dimensions.

Information Required with Order

Type

Coil rating

Type, number of combination of contacts

Operating time (if applicable)

Operation indicator

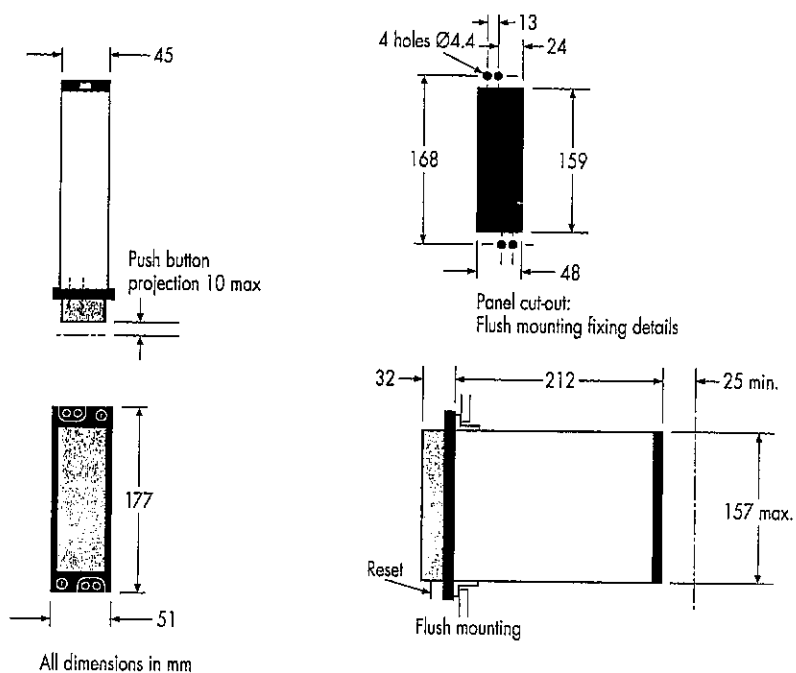


Figure 5: Case outline size 2

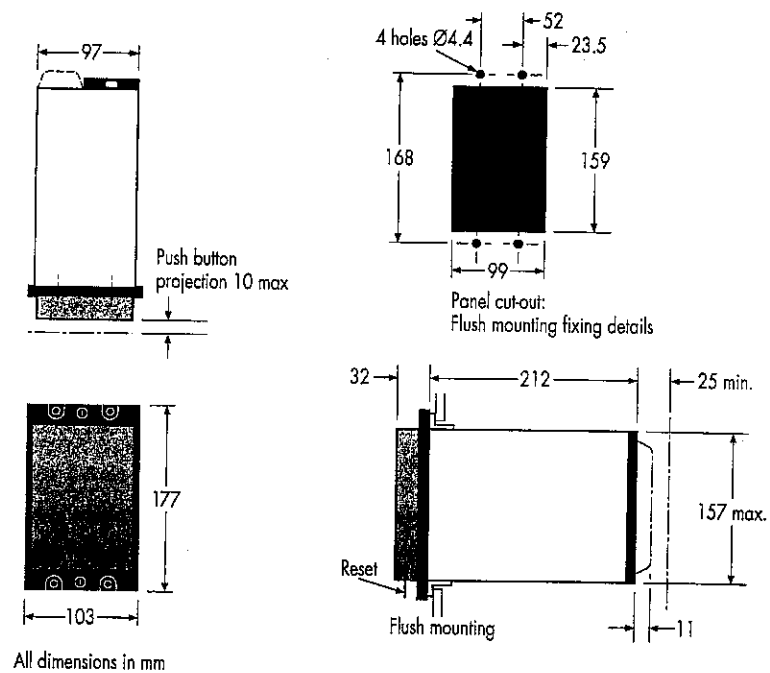


Figure 6: Case outline size 4

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