# MVAJM 11, 13,14, 15, 25-Version III

## High Speed Tripping and Control Relays


### Features

- High speed operation.
- High degree of mechanical stability.
- Positive action without chatter.
- Proof against high capacitance discharge currents.

### Models available

Type MVAJM relays may broadly be divided into three groups:

- High burden tripping relays - MVAJM 15, 25
- Low burden tripping relays - MVAJM 11, 13
- Control relays - MVAJM 14

### Technical data

Coil rating

Refer Table 2.

### Voltage band for satisfactory

operation

60% to 120% of rated voltage for trip relays. 75% to 120% for MVAJM 14.

### Contacts

The number of contacts available is shown in Table 2.

### Operating time

10 millisecs nominal at rated voltage

### Reset time

- Electrical reset relays: less than 15ms.

### Insulation

The relay meets the requirements of IS 3231 -1965/IEC/255-5 Series C- 2KV for 1 minute.

### Thermal rating

Relays with hand/Electrical reset contacts: Relay coil short time rated. Hand reset coil cut off contact provided in series with operating coil.

Relays with self reset contacts: 120% of rated voltage, continuous.

### Burden

Refer Table 2.

**Customer Benefits**

- Directly operates circuit breaker trip coils
- High reliability
- High speed operation
- Immunity to wiring capacitance

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Table 1 lists the general characteristics and includes information on how the relay burden is modified at or just after operation. 'Economised' indicates that the burden is reduced to a low value. Instantaneous cut-off is a feature of some hand and electrically reset elements and reduces the burden to zero.

**Table 1**

| SL. NO. | RELAY TYPE | CONTACT MECHANISM | OPERATION INDICATOR FACILITY | CUT-OFF | GROUP | CASE SIZE |
|---|---|---|---|---|---|---|
| 1 | MVAJM 11 | S/R | Available (H/R) | Economised | Low burden | Size 2 |
| 2 | MVAJM 13 | H/R | Available (H/R) | Instantaneous | Low burden | Size 2 |
| 3 | MVAJM 14 | E/R | Follow on Flag) | Instantaneous | Low burden | Size 2 |
| 4 | MVAJM 15 | H/R, E/R | Available (H/R) | Instantaneous | High burden | Size 2 |
| 5 | MVAJM 25 | H/R, E/R | Available (H/R) | Instantaneous | High burden | Size 4 |

KEY: i) S/R: Self reset ii) H/R: Hand reset iii) E/R: Electrical reset

### High burden tripping relays

### Types MVAJM 15,25

### Application

This relay is suitable for use in high security circuit breaker tripping circuits. In particular it can be used in distributed tripping or control relay contact logic schemes where the initiating contact may be remote from the relay.

The high burden provides immunity to capacitance discharge currents, which can result at the inception of an earth fault on battery wiring and immunity to the subsequent leakage current.

The high burden relays are recommended for use with series connected operation indicators, supervision relays and series seal-in units on protective relays.

**Table 2**

| SL.NO. | RELAY TYPE | STANDARD COIL RATING | NO. OF OUTPUT CONTACTS | STANDARD CONTACT CONFIGURATION | BURDEN |
|---|---|---|---|---|---|
| 1 | MVAJM 11 | 110/125V dc<br>220/250V dc | 10 | 10M, 8M+2B, 6M+4B, 4M+6B, 2M+8B | less than 10W |
| 2 | MVAJM 13 | 110/125V dc<br>220/250V dc | 10 | 10M, 8M+2B, 6M+4B, 4M+6B, 2M+8B | 25W |
| 3 | MVAJM 14 | 48/54V dc<br>110/125V dc<br>220/250V dc | 10 | 10M, 8M+2B, 6M+4B, 4M+6B, 2M+8B | 20W |
| 4 | MVAJM 15 | 24/27V dc<br>30/34V dc<br>110/125V dc<br>220/250V dc | 10 | 10M, 8M+2B, 6M+4B, 4M+6B, 2M+8B | 150W |
| 5 | MVAJM 25 | 24/27V dc<br>110/125V dc<br>220/250V dc | 20 | 20M, 18M+2B,16M+4B, 14M+6B, 12M+8B, 10M+10B 8M+12B, 6M+14B, 4M+16B | 150W |

KEY: M - Make B - Break

Note: Other contact configurations are also available on request.

### Low burden tripping relays

### Types MVAJM 11, 13

### Application

These relays are suitable for applications where immunity to capacitance discharge and high minimum operation current are not required. These relays are generally used when a number of simultaneous operations are to be initiated by a single protective relay having insufficient contacts of its own and where series connected operation indicators are not used.

### Control relay Type MVAJM 14

### Application

This is an electrically reset control relay. The relay is meant for switching the secondary circuits of current transformer in busbar protection. Also wherever "latch-in" type of control relay is required for contact multiplication control schemes, relay type MVAJM 14 can be employed.

## Contact ratings

| | MAKE AND CARRY CONTINUOUSLY | MAKE AND CARRY FOR 3 SECONDS | BREAK |
|---|---|---|---|
| AC | 1250VA with maxima of 5A and 660V | 7500VA with maxima of 30A and 660V | 1250VA with maxima of 5A and 660V |
| DC | 1250W with maxima of 5A and 660V | 7500W with maxima of 30A and 660V | 100W (resistive) 50W (inductive) with maxima of 5A and 660V |

## Environmental Conditions

- Temperature
  Per IEC 60255-6: 1998
  Storage and Transit: -25 deg C to +70 deg C
  Operating: -25 deg C to +55 deg C
  Tested as per:
  IEC 60068-2-1: 1990/A2: 1994 Cold
  IEC 60068-2-2: 1974/A2: 1994 Dry Heat
- Humidity
  Per IEC 60068-2-3: 1969
  56days at 93% RH and +40 deg C

## Durability

- Loaded contact 10,000 operations minimum
- unloaded contact 100,000 operations minimum

## Information required with order

1. Type of relay
2. Coil voltage rating
3. Number of'make'and'break' contacts
4. Whether operation indicator required

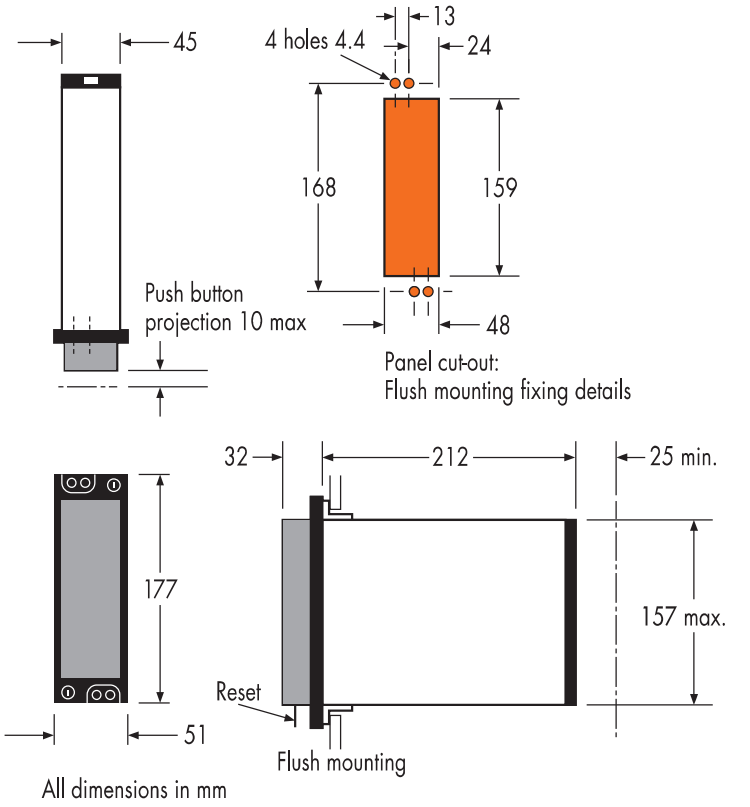


Figure : Case Outline Size 2.

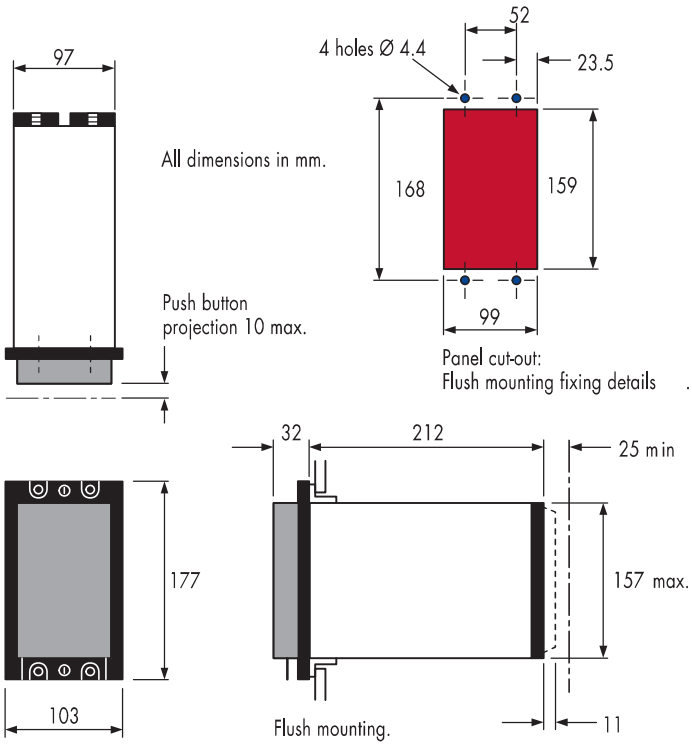


Figure : Case Outline Size 4.

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