

Trip circuit and Trip Coil supervision Relay

Type VAX / MVAXM



Customer Benefits

- Trip circuit and Trip coil supervision relay
- Choice of pre-closing and Post-closing supervision
- Simple and robust construction
- Draw out type case
- Completely dust proof by IP5X class protection

Types VAX & MVAXM

Trip circuit supervision relays

Features

- Simple and robust construction
- Positive action without chatter
- Choice of pre-closing and post-closing supervision

Application

Post-closing or continuous supervision of the trip circuit of circuit breakers

General description

Type VAX and MVAXM relays are of simple and robust construction. They are arranged to initiate an audible alarm and visual indication if the trip circuit of a circuit breaker fails or the breaker tripping mechanism does not operate

Two versions of type VAX and MVAXM relays are available. Type VAX 21 and MVAXM 21 relays monitor the trip circuit only when the circuit breaker is closed (post-closing supervision only) while type VAX 31 and MVAXM 31 relays monitor the trip circuit continuously (both pre-closing and post-closing supervision). Both versions detect the following conditions.

- Failure of trip supply
- Open circuit of trip coil of trip circuit wiring
- Failure of mechanism to complete the tripping operation

Type VAX 21 and MVAXM 21 relays consist of two units connected as shown in figures 1(a) and 1(b). Under healthy condition with circuit breaker closed, both units are energised. If the trip circuit gets open or the trip supply fails, units A drops-off and opens contact A-1 to de-energise unit C. when the circuit breaker is open the auxiliary switch of the circuit breaker shorts contact A-1 to hold-in unit C.



Type VAX 31 and MVAXM 31 relays Under healthy conditions with the consist of three units connected as shown in figures 2(a) and 2(b), circuit breaker closed, units A and C are energised and the operation is the same as that of type VAX 21 and MVAXM 21 relays. When the circuit breaker is open unit B is also energised via the normally closed auxiliary switch of the circuit- breaker and unit C is held-in by contact B-1 Unit B will detect trip circuit abnormalities with the circuit breaker open in a similar manner as unit A with the circuit breaker closed

The C unit in both the versions are delayed on drop-off by means of RC circuit for a total time of 350 to 800 milliseconds, to prevent a false alarm due to collage dips caused by faults in other circuits or during a normal tripping operations, when unit A is momentarily short circuited by the self reset tripping relay contact. If the trip relay fails to reset possibly due to failure of the circuit breaker tripping mechanism, the alarm is initiated The alarm unit is designed to operate via pilot wires, if required

Technical data

Coil rating

For VAX relay:

24,30, 48, 50, 110/125 or 220/250 volts dc operating band 80% - 120% of rated voltage

Maximum loop resistance – 50 ohms for nominal alarm supply – 24 to 50 V

Other alarm supplies – 400 ohms

When rated for a 100V alarm supply the unit 'C' will not operate at a current less than 25 milliamperes. It is therefore suit-

able for use with anti-corrosion negative potential blasing device.

For MVAXM relay:

110/125 and 220/250 Volts dc as standard and other coil ratings are available on request Maximum loop resistance is 400 ohms for nominal alarm supply.

Operating time

0.35 to 0.8 sec. at 80% of rated volts (between failure of trip circuit and operation of alarm contact)

Thermal rating

120% of rated voltage continuous

Operating indicator

Hand reset operating indicator provided when required

Contacts

3 pairs of self reset contact one make and two 'break' as standard

Insulation

The relays meet the requirements of IS 3231/EC 255-5 Series C-2 KV for 1 minute

Burdens

For VAX

	DC Voltage	24	30	48/50	110/125	220/250
Maximum watts	Trip supply	0.52	0.56	0.62	1.56	3.13
	Alarm Supply	0.37	0.38	0.44	1.12	2.6

For MVAXM

	Dc voltage	110/125	220/250
Maximum watts	Trip supply	1.56	3.13
	Alarm supply	1.12	2.6

Contact ratings

	Make and carry continuously	Make and carry for 3 break seconds	
AC	1250VA with maximum of 5A and 660 V	7500VA with maxima of 30A and 660V	1250VA with maxima of 5A and 660V
DC	1250 with maximum of 5A and 660V	7500VA with maxima of 30A and 660V	100W (resistive) 50W (inductive) with maxima of 5A and 660V

Dimensions and weights

For VAX relay

relay	Case Size	Maximum overall dimensions			Approximate Gross weight Kg.
		Height mm	Width mm	Depth* mm	
VAX 21	½ N Hor.	124	153	130	1.8
VAX 31	1D Vert.	233	170	203	5.2
	½ N Hor.	124	153	130	1.8

*Add 76 mm for maximum length of terminal studs, alternatively, 29 mm for terminal screws.

The approximate gross weights given above are inclusive of cartons, mounting appendages and terminal details.

The relays comply fully with requirements of IS 3231 and are suitable for use in normal tropical environments.

For MVAXM relay:

- MVAXM 21
Size 3 Midos

- MVAXM 31
Size 4 Midos

Information required with order

1. Type of relay (VAX 21 or VAX 31 or MVAXM 21 or MVAXM 31)
2. Coil voltage rating

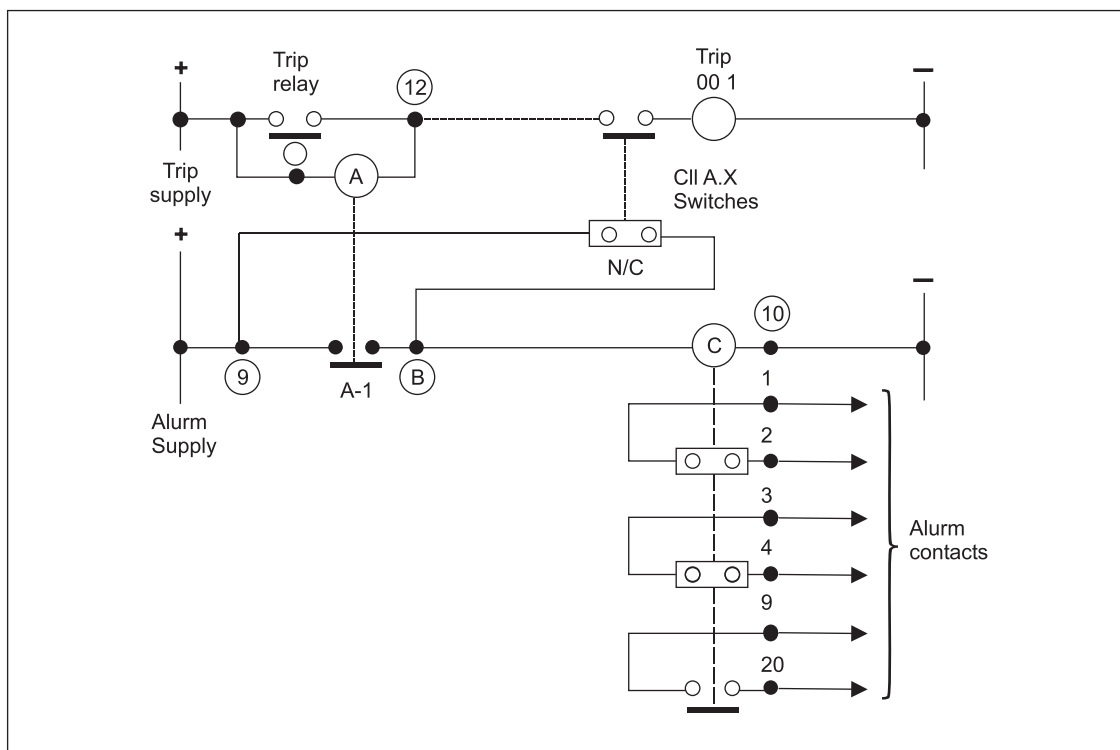


Figure 1 (a) Supervision circuits with type VAX 21 relay

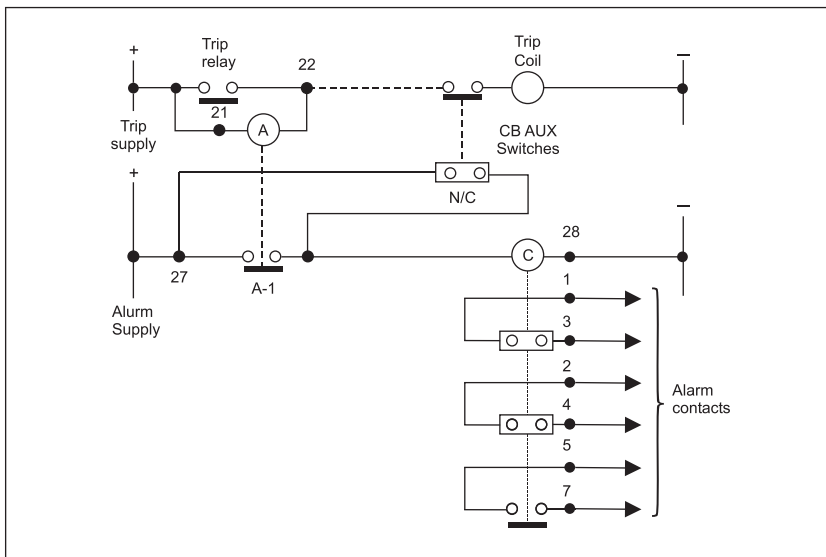


Figure 1 (b) Supervision circuits with type MVAXM 21 relay

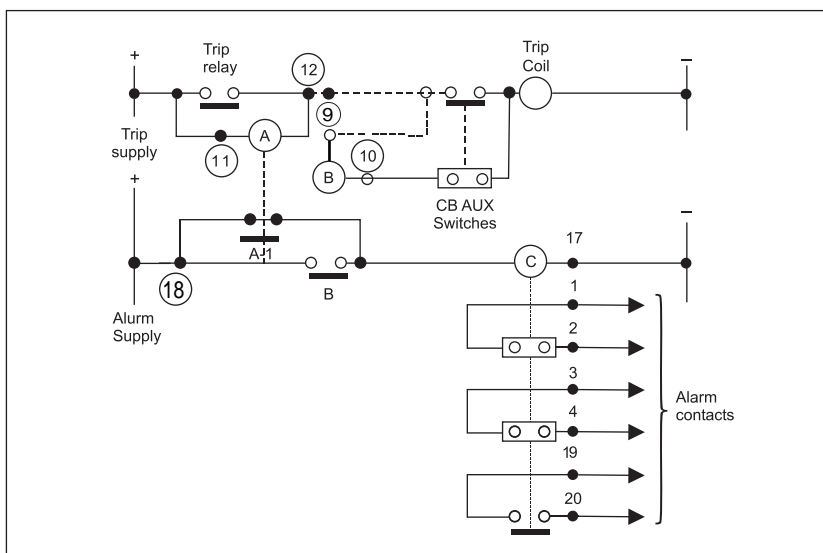


Figure 2 (a) Supervision circuits with type VAX 31 relay

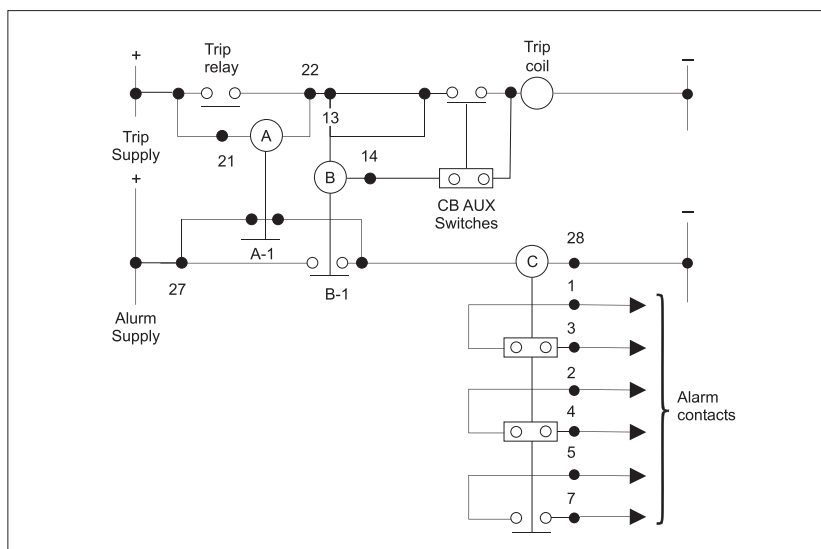


Figure 2 (b) Supervision circuits with type MVAXM 31 relay

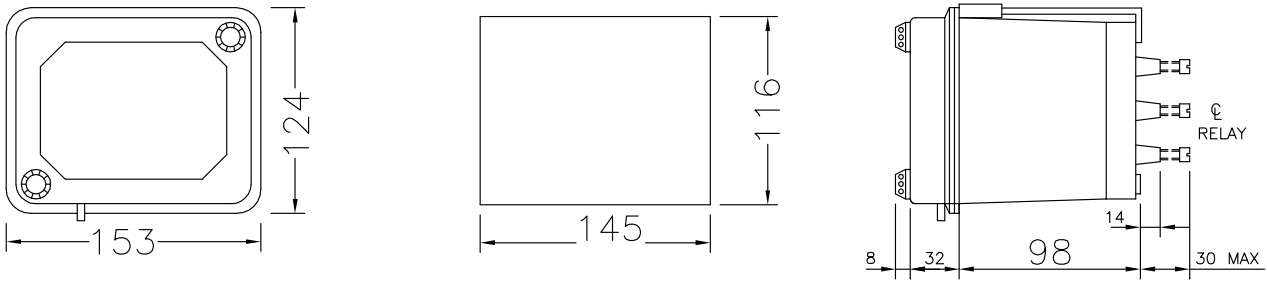


Figure 3 : Case and panel cut-out dimensions for case 1/2N (all dimensions in mm)

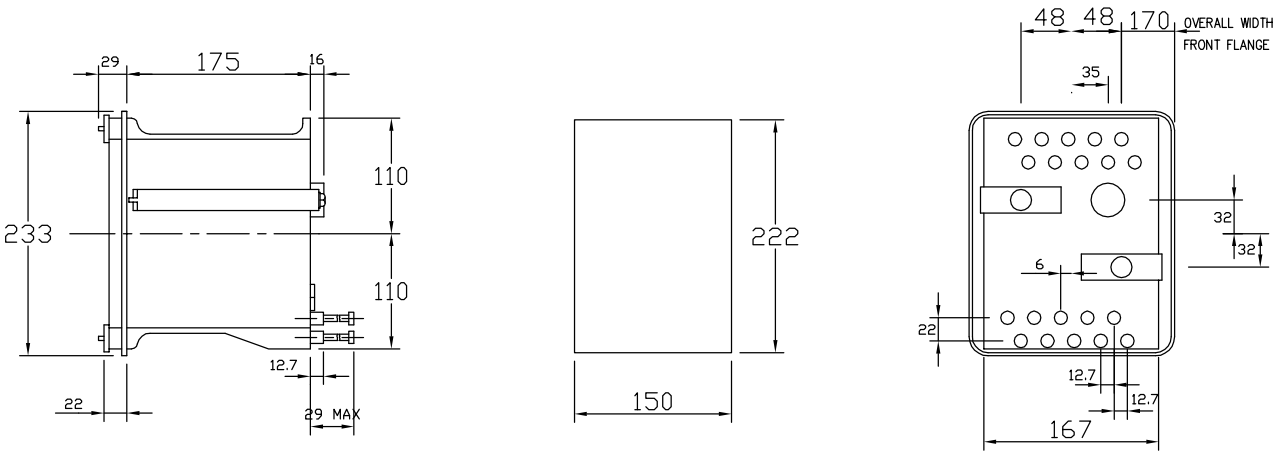


Figure 4 : Case and panel cut-out dimensions for case 1D (all dimensions in mm)

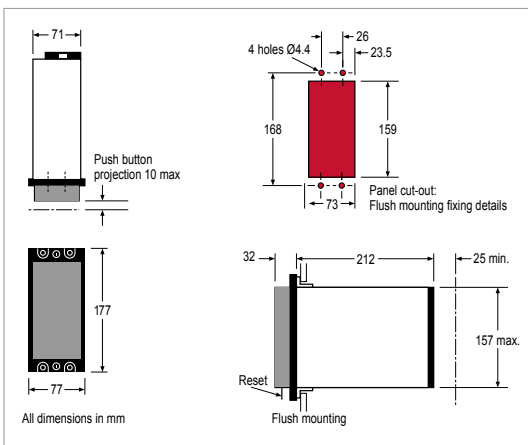


Figure 5 : Case outline: size 3

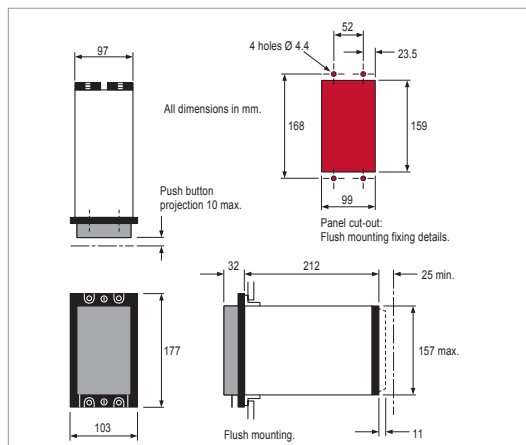


Figure 6 : Case outline: size 4

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