

# Trip Circuit and Trip coil supervision Relay

Type VAX



## Customer Benefits:

- Trip circuit and trip coil supervision relay
- Choice of pre closing and post-closing supervision
- Simple and robust construction
- Only two variants based on Power Supply option: 110/220 and 24 /48
- Completely dust proof by IP5X class protection
- Standard contact combination with 2NO+2CO, suitable for all possible application

## Type VAX

### 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

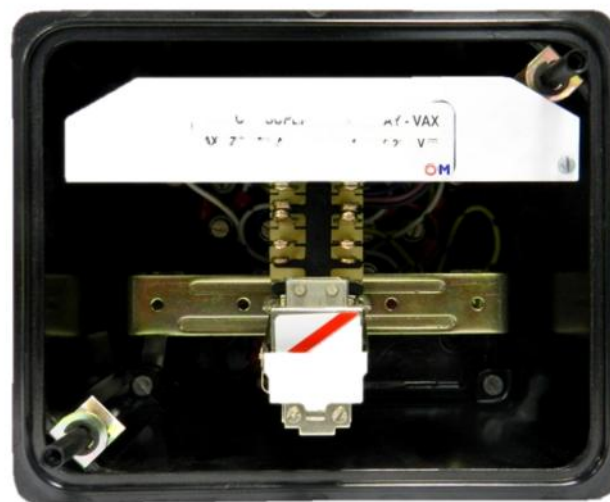
#### General Description

Type VAX 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 relays are available. Type VAX 21 relay monitors the trip circuit only when the circuit breaker is closed (post-closing supervision only) while type VAX 31 relay monitors 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 relay consists of two units connected. Under healthy condition with circuit breaker closed, both units are energized. If the trip circuit gets open or the trip supply fails, units A drops-off and opens contact A-1 to de-energize 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 relay under healthy conditions with the consist of three units connected, circuit breaker closed, units A and C are energized and the operation is the same as that of type VAX 21 relays. When the circuit breaker is open unit B is also energized 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

Standard voltage variants 24/48 Vdc and 110/220 Vdc. Models with specific voltage rating such as 24, 30, 48, 50, 110/125 or 220/250 volts dc are also available for ordering.

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

### 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

2 Normally Open and 2 Changeover contacts available with 24/48 Vdc and 110/220 Vdc variants

3 pairs of self-reset contact one make and two 'break' as standard with other models

### Insulation

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

## Burdens

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

## Contact Ratings

	Make and Carry Continuous	Make and Carry for 3 Sec	Break
AC	1250VA with maximum of 5A and 660V	7500VA with maximum of 30A and 660V	1250VA with maximum of 5A and 660V
DC	1250W with maximum of 5A and 660V	7500W with maximum of 30A and 660V	100W (resistive) 50W (inductive) with maximum of 30A and 660V

### Dimensions and Weights

Relay	Case Size	Maximum overall dimension			Approximate Gross weight kg.
		Height (mm)	Width (mm)	Depth* (mm)	
VAX 21	$\frac{1}{2}$ N Hor	124	153	130	1.8
VAX 31	1 D Vert.	233	170	203	5.2
	$\frac{1}{2}$ N Hor	124	153	124	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.

### Information Required to Order

1. Type of Relay (VAX 21 or VAX 31)
2. Aux Voltage rating

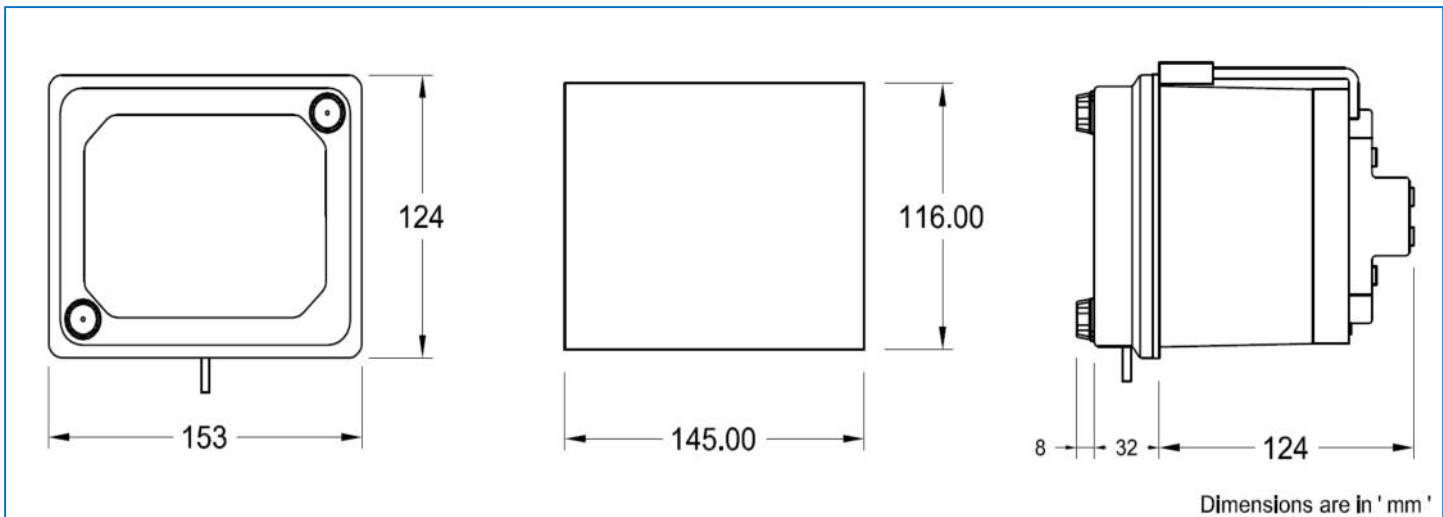


Figure 3: Case and panel cut-out dimensions for case ½ N (all dimensions in mm)

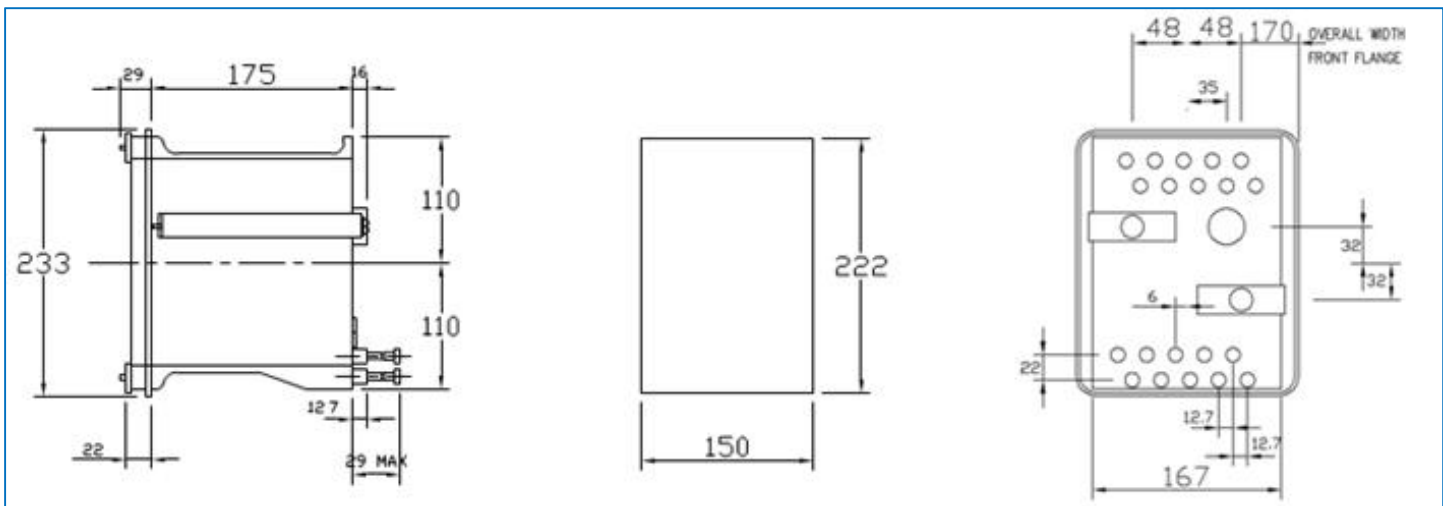


Figure 4: Case and panel cut-out dimensions for case 1D (all dimensions in mm)

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