

Megawin Switchgear

MVAX Trip Circuit Supervision Relays



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Application

Supervision of the trip circuit of circuit breakers

Features

- Robust and designed for trouble free operation.
- They ensure positive action without chatter.
- Provide choice of pre-closing and after closing supervision.

General

MVAX relays are standard attracted armature type relays. They are designed to initiate an audible alarm and visual indication, if the trip circuit of a circuit breaker fails or the mechanism does not operate.

The relays are available in two versions, MVAX 21 MVAX 31, Type MVAX 21 relay, consisting of two armature units, monitors the trip circuit only when the circuit breaker is closed (after closing supervision only). Whereas type MVAX 31 relays, consisting of three armature units, monitors the trip circuit continuously (both pre-closing and after closing supervision). Both versions detect the following.

Failure of Trip Supply

Open circuit of trip coil of trip circuit wiring

Failure of mechanism to complete the tripping operation

The principle of operation of type MVAX 21 is as depicted in Figure-1. Under healthy conditions, both units are energised, when the Circuit Breaker is closed. If the trip circuit is open or the trip supply fails, unit A drops -off and contact A-1 opens and unit C is de-energised. When the circuit breaker is open the auxiliary switch of the circuit breaker shorts contact A-1 to hold in unit C.



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The principle of operation of type MVAX 31 is as depicted in Figure-2. Under health conditions, unit A and C are energised, when the Circuit Breaker is closed and the function is similar to type MVAX 21 relay. When the circuit breaker is open. Unit B is energised via the normally closed auxiliary switch of the circuit breaker and unit C is held-in by contact B-1. Unit B will monitor the trip circuit when circuit breaker is open, in a similar manner as unit A monitors the trip circuit when circuit breaker is closed

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

Operating Indicators

Hand reset operation indicator provided

Contacts

3 pairs of self reset contacts one make and two 'break' as Standard

Insulation

As per IS 3231 : 1986 / IEC 255-5 Series C – 2kV for 1 minute

Burden

	DC Voltage	24	30	48/50	110/125	220/250
Max	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

Case

Size 1/2N horizontal, non-drawout case (standard)

Coil Ratings

24,30, 48/50, 110/125 or 220/250 Volts D.C.

Operating band 80-120% of rated voltage

Maximum loop resistance 50 other ohms for nominal alarm supply 24 to 50 Volts.

For other alarm supplies – 400 Ohms.

When rated for a 110V alarm the unit 'C' will not operate at a current less than 25 milli amperes. It is therefore suitable for use with negative potential biasing device.

Operating Time

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

Information required with order

Type of relay (MVAX21 or MVAX31) . Coil voltage rating.

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Contact Ratings

AC	1250VA maximum of 5A and 660V	7500VA with maximum of 30A and 660v	1250A with maximum of 5A and 660V
DC	1250VA maximum of 5A and 660V	7500VA with maximum of 30A and 660v	100W resistive 50W inductive with max of 5A and 660V

Dimensions and weights

Relay	Case size	Max overall dimensions (mm)			Weight (appx.) Kgs
MVAX21 / MVAX31	½ N	118	153	130	2.5

The relays comply with IS 3231: 1986 and suitable for use in normal tropical environments.

Due to continuous improvement, some information in this catalogue might have become absolute.



 **MEGAWIN**

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