

VAG

Instantaneous Voltage relay



Features

- Simple and robust construction.
- Positive action without chatter.

Description

Relay type VAG is a standard attracted armature relay with a fixed setting. The simplicity of construction provides ease of maintenance and adjustment.

Certain applications require a high drop off/pickup ratio can be supplied by using a dc coil with an internally mounted bridge rectifier and an auxiliary VAA relay. A surge suppression module is incorporated in such relays for protecting the diodes against higher voltage transients.

Type VAG 11 is a single pole relay. Type VAG 21 is a type VAG 11 relay with an auxiliary unit type VAA 11.

Technical data

Voltage Ratings

Relays can be supplied suitable for operation on any system voltage upto 440V ac or dc.

Instantaneous protection and definite time protection (when used in conjunction with a timer) against abnormal voltage conditions such as over voltage or no voltage in ac and dc circuits.

Standard voltage ratings are 30, 110 or 220V dc and 63.5,110 or 240V ac 50 Hz.

Voltage Setting

Over Voltage Relays

VAG 11/VAG 21

Ac or dc relays can be supplied to operate at 110% or 120% or 130% or 140% of the nominal voltage.

Under Voltage Relays:

VAG11

Ac or dc relays can be supplied to operate at 30% or 40% or 50% or 60% of the nominal voltage.

VAG21

Ac or dc can be supplied to operate within the range 25% to 60% of the nominal voltage.

Resetting Voltage

Type VAG 11 standard ac or dc over voltage relays with resetting value below 80% of the voltage setting. Dc or rectified ac over voltage relays type VAG21, can be supplied having a fixed resetting value between 20% and 90% of the voltage setting as desired.

Type VAG 11 standard ac under voltage relays will reset at any value above 125% of the voltage setting dc or rectified ac under voltage relays type VAG 21 can be given a fixed resetting value between 110% of the

voltage setting and the nominal voltage as desired.

Type VAG 11 standard ac or dc no voltage relays will reset at any value below 90% of the nominal voltage

Operating Times

OVER VOLTAGE RELAYS

Approximately 0.060s at 110% of the voltage setting.

UNDER VOLTAGE AND NO VOLTAGE RELAYS

Approximately 0.020s at zero voltage.

Burdens

(VAG Coil)

2.0 VA ac at pick-up voltage.

0.5 W dc at pick-up voltage.

The burden of under-voltage and no voltage relays at rated nominal voltage is directly proportional to the square of the ratio between nominal and pick-up voltage.

Customer Benefits

- Wide range of Voltage setting
- High drop off/pick up ratio
- Reliable protection for generators, capacitors etc

Thermal Rating

Ac relays will withstand twice the pick-up voltage continuously.

Dc and rectified ac relays will withstand five times the pick-up voltage relays conform to error class index E 5.0 as per B.S. 142 and 5.0 as per IS 3231.

Accuracy

The over voltage & under voltage relays conform to error class index E 5.0 as per B.S.142 and 5.0 as per IS 3231.

Operation Indicator

The relays can be fitted, if required, with an operation indicator which is hand reset by means of a push-rod protruding through the relay case.

On under voltage and no voltage relays, a reverse operation indicator is fitted. i.e., the indicator operation on reduced voltage or complete loss of voltage.

Contact Ratings

	Make and carry continuously	Make and carry for 0.5 second	Break
AC	1250 VA with maxima of 5A and 660V	7500 VA with maxima of 30A and 660V	1250VA with maxima of 5A and 660V
DC	1250 W with maxima of 5A and 660V	7500 W with maxima of 30A and 660V	100W (resistive) 50W (inductive) maxima of 5A and 660V

Contacts

Standards over voltage and under voltage relays type VAG 11, ac or dc are fitted with two pairs self reset 'normally open' contacts or one pair 'normally open, and one pair 'normally closed, self reset contacts.

Type VAG 21, dc or rectified ac over voltage and under voltage relays can be fitted with three pairs output S/R contacts, in combination of three pairs 'normally open' or two pairs 'normally open' and one pair 'normally closed' or two pairs 'normally closed' and one pair 'normally open' contacts on the auxiliary unit type VAA 11 which is always energized by a normally open, light duty contact of the VAG 11 unit. A separate ac or dc supply is required for the auxiliary unit.

Type VAG 11, ac or dc no voltage relays are fitted with two pairs of self reset contacts in the following combinations one 'normally open' one 'normally closed' S/R contacts and two 'normally open' S/R contacts.



Insulation

The relays meets the requirements of IS 3231/IEC 255-5 Series C 2kv for 1 minute.

Case

Relays can be supplied in moulded nondrawout or metal drawout cases as required, suitable for flush mounting.

Non-draw-out cases are finished bright black and metal drawout cases are finished eggshell back/twin tone and are tropicalised.

Dimensions and weights

Relay	Case size	Maximum No. of terminals		Maximum overall dimensions			Approximate gross weight Kg
		Single ended	Double ended	Height mm	Width mm	Depth* mm	
VAG 11	¼ N Vert.		10	118	105	115	1.3
	1D Vert.	10	20	233	170	203	5.3
VAG 21	½ N Hor.		12	124	153	130	2.3
	1D Vert.	10	20	233	170	203	5.5

* 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 the requirements of 1.5,3231 and are suitable for use in tropical environments.

The drawout feature considerably simplifies maintenance and permits testing to be carried out easily and quickly. A cradle mounted isolating switch is provided which automatically isolates the trip circuit when the cradle assembly is withdrawn from the case for maintenance. This prevents any inadvertent tripping of the circuit breaker. The drawout case is fitted with switches which maintains the under voltage trip circuits on withdrawal of the relay unit from the case. A filter breather is fitted which equalises pressure inside and outside the case without admitting dust.

Single pole relays type VAG 11 are mounted in size ¼ N Vertical or size 1D vertical cases. Type VAG 21 relays are mounted in size ½ N horizontal or size 1 D vertical cases.

Information required with order

1. Type of relay VAG 11 VAG 21
2. Application : over voltage under voltage no voltage
3. Nominal Voltage rating ac or dc
4. Voltage setting required.
5. Drop-off/pick-up ratio required.
6. Number of 'normally open' and 'normally closed' contacts.
7. Auxiliary voltage rating of the auxiliary unit, for VAG 21
8. Case size. 1/4N 1 D

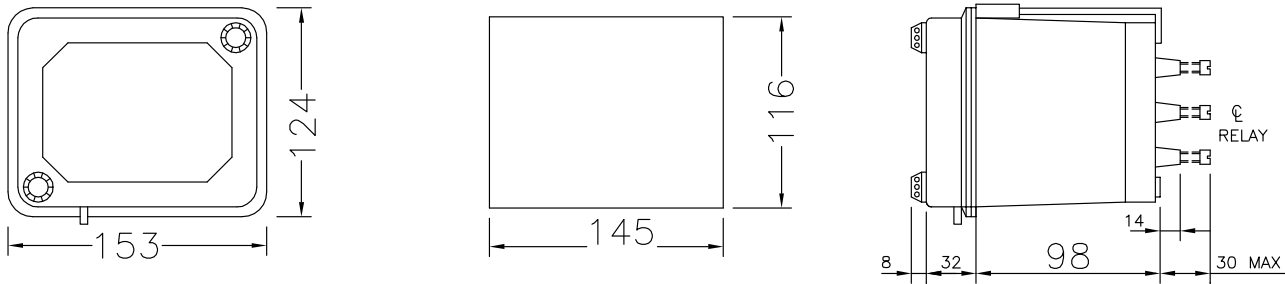


Figure: Case and Panel cut-out dimensions for case 1/2N (all dimensions in mm)

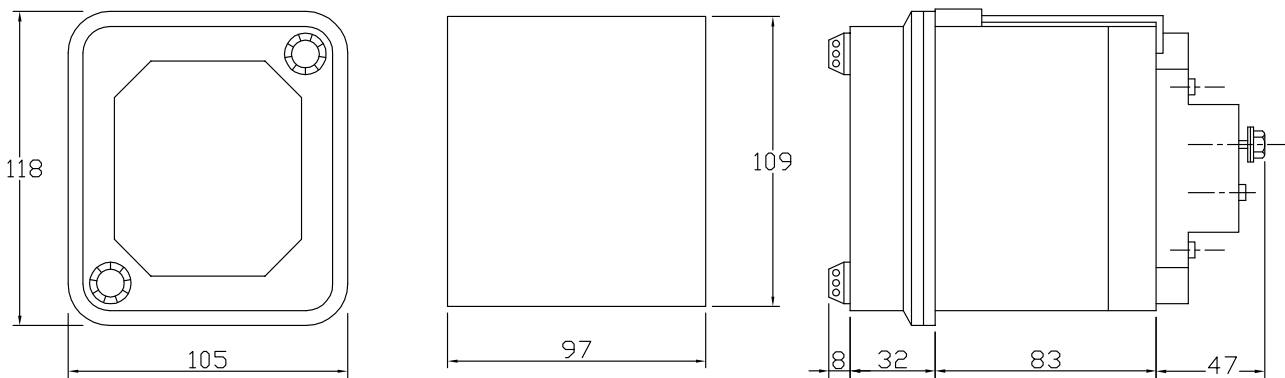


Figure: Case and Panel cut-out dimensions for case 1/4N (all dimensions in mm)

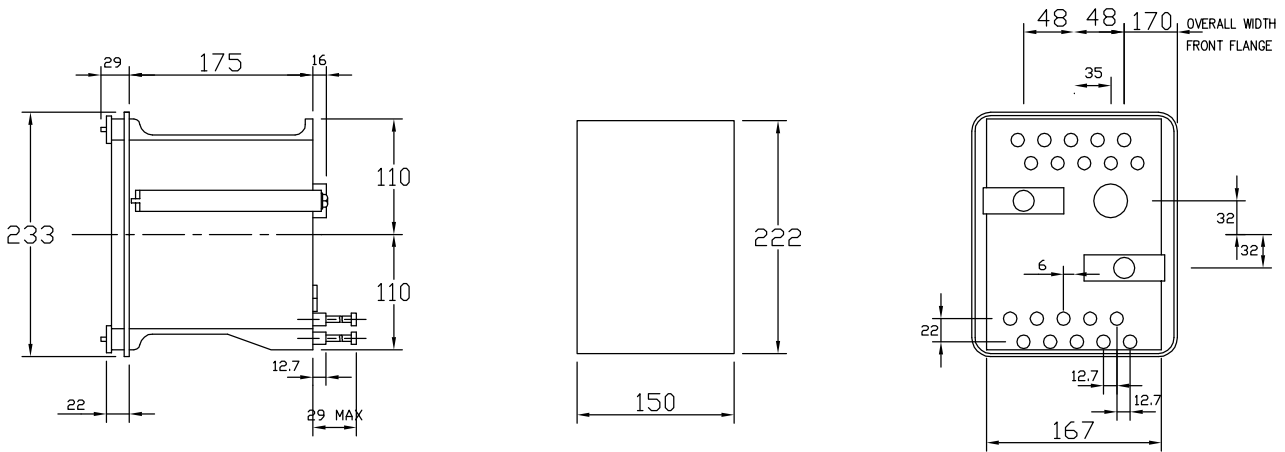


Figure: Case and Panel cut-out dimensions for case 1D (all dimensions in mm)

ALSTOM T&D INDIA LIMITED
 Pallavaram Works
 19/1, G.S.T. Road,
 Pallavaram, Chennai - 600 043
 Tel.: 91-44-2264 8000
 Fax: 91-44-2264 0040

ALSTOM T&D Worldwide Contact Centre:
<http://www.alstom.com/contactcentre/>
 Tel.: +44 (0) 1785 250 070

www.grid.alstom.com