Type VTT 11, 12

Definite Time Delay Relay

VTT is a static time delay relay which is particularly suitable for applications requiring large number of operations and consistent accuracy with little or no maintenance over long periods. It is also commonly used in industrial processes.

Features

- Consistent accuracy
- Reliability
- Low burden
- Reduced maintenance
- Immunity to transients and surges; withstands 5 kv impulse voltage test
- Relays with heavy-duty magnetic blow-out contacts also available

Description

A stabilised voltage is applied to a resistance/capacitance circuit. The potential developed across the capacitor is applied to a transistor switching circuit which, in turn, operates an attracted armature relay when the potential reaches the trigger level.

The time delay is varied by altering the resistance value in the resistance/capacitance circuit by a potentiometer calibrated in seconds. A circuit is incorporated to protect the transistors from damage due to high peak transients in the supply voltage. A diode is also fitted in the circuitry to take care of inadvertent connection of supply with reversed polarity.

Type VTT 11 units have a delayed pick-up, i.e., timing is started by closing an initiating contact and the output relay is energised at the end of the set time. The unit resets when the initiating contact is reopened.

Type VTT 12 units have a delayed drop-off, i.e., the output relay is normally energised. Timing is started by opening an initiating contact and the output relay is deenergised at the end of the set time. The unit resets when the initiating contact is reclosed.

Technical data

Voltage ratings

DC supply

30, 48, 110 or 220V. Satisfactory operation is maintained between 70% and 130% of rated voltage.

Units for use on 110 or 220V are supplied with a suitable external resistor.

AC supply

110, 240 or 415V at 50 Hz. Relays suitable for operation from ac supply have a built-in power pack. Satisfactory operation is maintained between 80% and 115% of rated voltage.

Timing ranges

Models with the following setting ranges (in seconds) - continuously adjustable - are available:

0.05 - 0.5
0.10 - 1.0
0.50 - 5.0
1.00 - 10.0
2.50 - 25.0

Accuracy

Within ±5% of setting or ±10 milliseconds whichever is greater, at nominal voltage and at an ambient temperature within the range of 10°C and 30°C.

Within ±5% of setting or ±25 milliseconds whichever is greater for supply voltage variation for ±30%. Operating temperature range -5°C to +50°C.

Customer Benefits

- Accurate and Reliable
- Adjustable time delay
- Heavy duty magnetic blow out contacts on request

Type VTT with cover removed

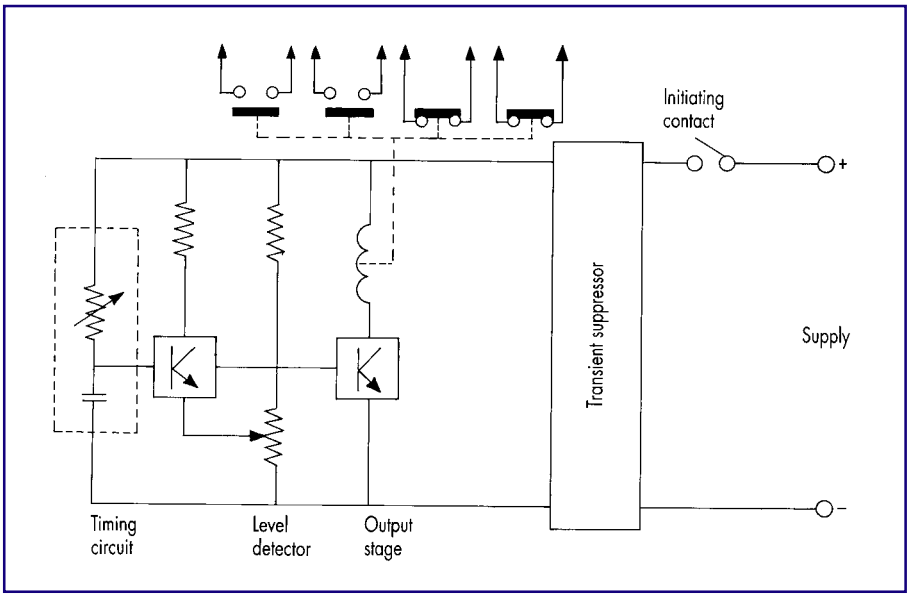

Figure 1: Basic circuit diagram for VTT 11 relay

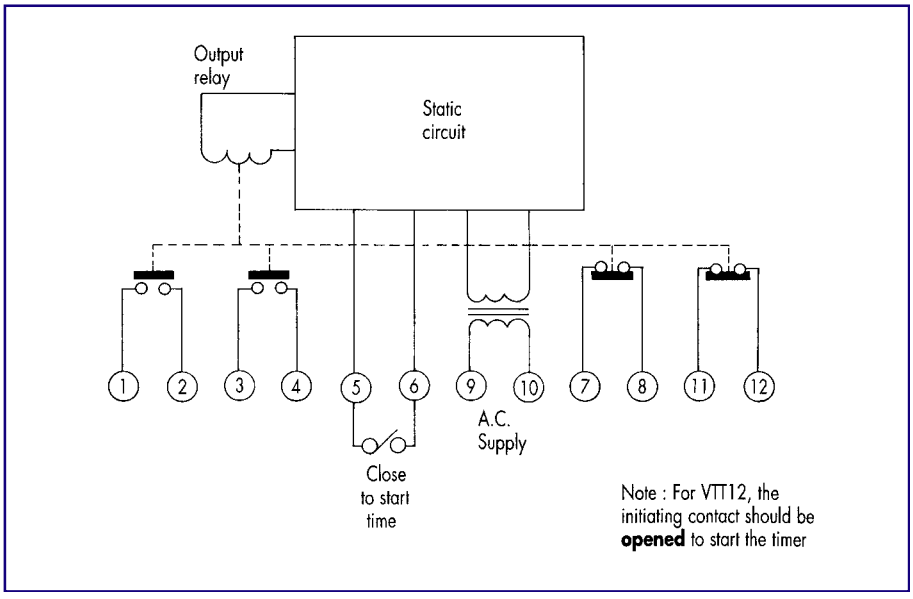

Figure 2: Typical connection diagram for ac VTT 11 relays

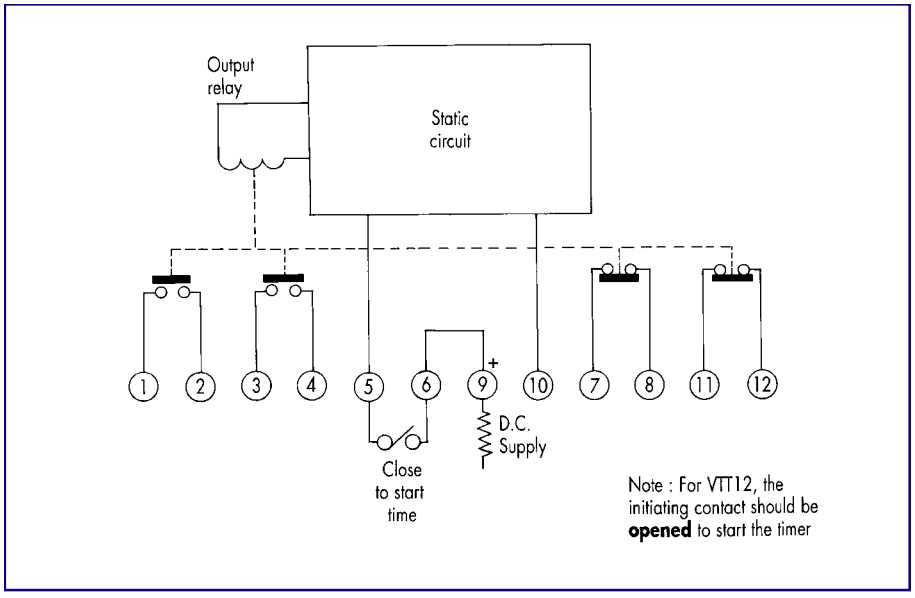

Figure 3: Typical connection diagram for dc VTT 11 relays

Contacts

Four pairs of self-reset contacts in any combination of normally open or normally closed with a maximum of 2 normally closed contacts are provided on the output attracted armature unit of VTT 11 relays. Hand reset contacts can be provided. For VTT 12 relays three pairs of selfreset contacts with maximum of 2 normally closed contacts are available.

Note

Relays with heavy duty magnetic blowout contacts are also available on request.

Operation indicator

A hand reset mechanical flag operation indicator can be provided on the output relay.

Insulation

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

Impulse voltage

The relay complies with the requirements of IS-8686/ IEC 255-4, Appendix-E to Class III.

High frequency interference

The relay complies with IS-8686/ IEC 255-22-1, Appendix-C to Class III.

Case

The VTT 11 and VTT 12 are supplied in 1/2N non-drawout moulded cases suitable for flush mounting. Non-drawout cases are finished bright black. Relays can also be supplied in 1/2 N and 1D drawout cases on request.

Burdens (when energised)

DC	Burden (W)
30V	1.26
110V	4.46
220V	9.1

AC	Burden (VA)
110V	2.4
240V	2.3
415V	2.6

Dimensions and weights

Relay		Maximum overall dimensions			Approximate gross weight Kg
	Case size	Height mm	Width mm	Depth* mm	
VTT11 or VTT12	1/2N Horz.	124	153	130	1.75

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

Information required with order

1. Relay type (delay on pick-up or delay on drop-off)
2. Timing range
3. Voltage rating
4. Contact combination
5. Case

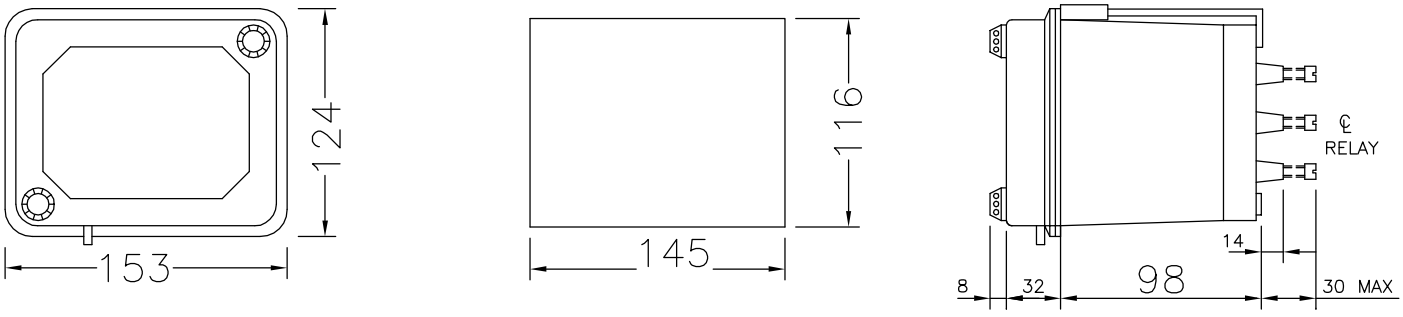

Figure 2 : Case and panel cut-out dimensions for case 1/2N (all dimensions in mm)

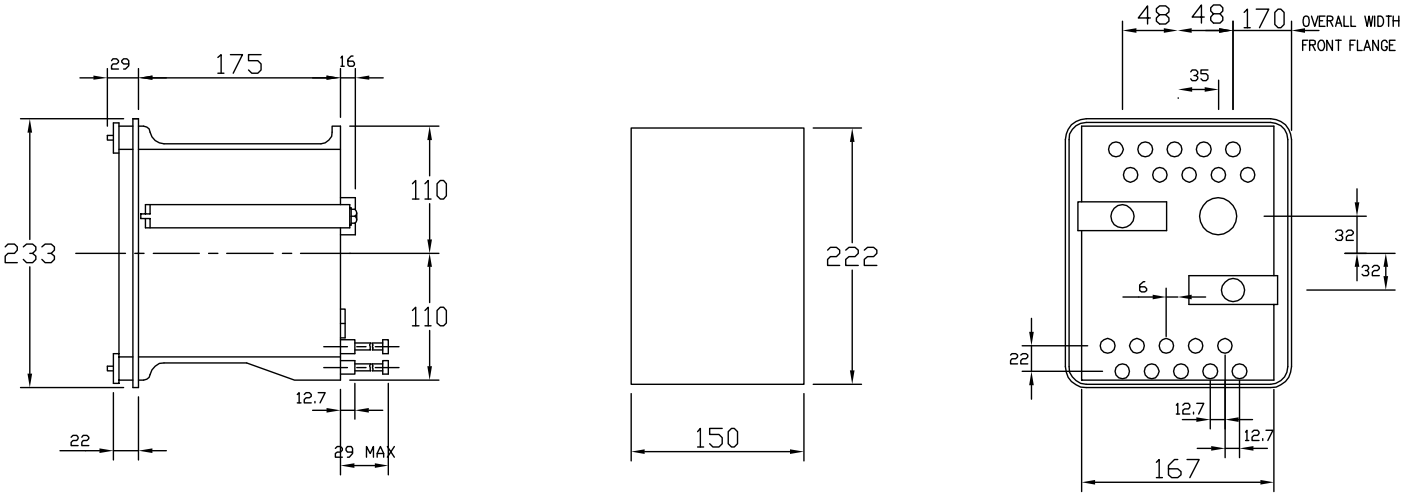

Figure 3 : Case and panel cut-out dimensions for case 1D (all dimensions in mm)

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