

GEC Measurements

Type VTT

The type VTT static time delay unit is particularly suitable for use with industrial processes requiring a large number of operations and consistent accuracy with little or no maintenance over long periods.

OPERATION

A stabilised voltage is applied to a resistance/capacitance circuit and the potential developed across the capacitor is applied to a transistor switching circuit which 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 using a potentiometer calibrated in seconds. A circuit to protect the transistors from damage due to high transient supply voltages is incorporated.

Type VTT11 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 re-opened.

Type VTT12 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 de-energised at the end of the set time. The unit resets when the initiating contact is re-closed.

Type VTT21 units comprise two separate VTT11 units in one case.

TIMING RANGES

The timer provides a continuously variable time delay on pick up or reset over any one of the following ranges:

0.05—	0.5 second
0.1 —	1.0 second
0.5 —	5.0 seconds
2.5 —	25 seconds
6.0 —	60 seconds
12 —	120 seconds

ACCURACY

Within $\pm 5\%$ of setting or ± 10 milliseconds whichever is greater at nominal voltage and an ambient temperature range of 10°C to 30°C .

Within $\pm 15\%$ of setting for a temperature variation of -20°C to $+50^\circ\text{C}$.

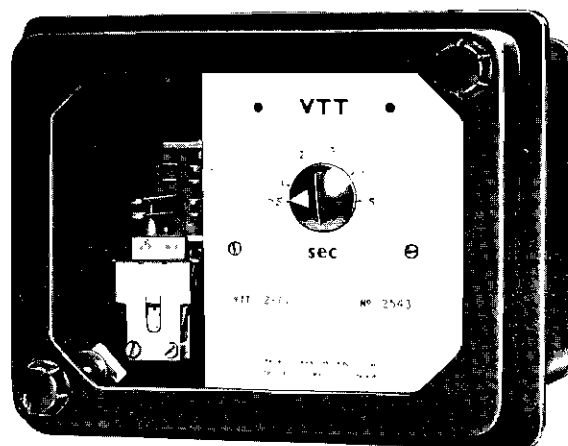
Within $\pm 5\%$ of setting or ± 25 milliseconds whichever is greater for supply voltage variation of $\pm 30\%$.

Repeatability The unit will repeat successive timings within $\pm 1\%$ or ± 10 milliseconds whichever is the greater, when allowed to completely reset. When the unit is only allowed to reset to within 3% of the maximum operating time, the accuracy is within $\pm 5\%$.

VOLTAGE RATINGS

D.C. Supply 30, 48/50, 110/125 or 220/250 volts continuous. Satisfactory operation is maintained at between 60% and 130% of rated voltage.

Units for use on 48/50, 110/125 or 220/250 volts are supplied with an externally mounted series resistor 3" long $\times \frac{1}{8}$ " diameter (76 $\times$ 14 mm).



TYPE VTT12 UNIT IN SIZE $\frac{1}{2}$ MOULDED CASE

A.C. Supply 110, 240 or 440 volts continuous 50 or 60 Hz with built-in power pack.

Satisfactory operation is maintained at between 80% and 115% of rated voltage.

BURDEN

Supply	Standing	Operating
d.c.	0	40 mA
a.c.	0.05 VA	2.5 VA

CONTACTS

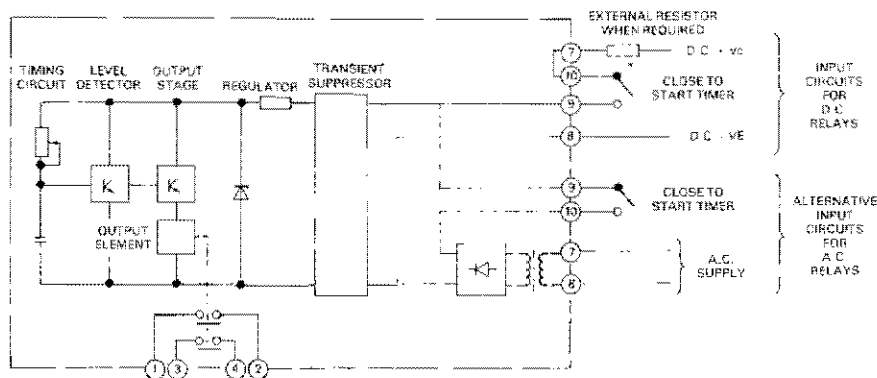
Two pairs of self reset contacts in any combination of normally open or normally closed are provided on the output attracted armature relay. Hand reset contacts can be provided on VTT11 units.

CONTACT RATING

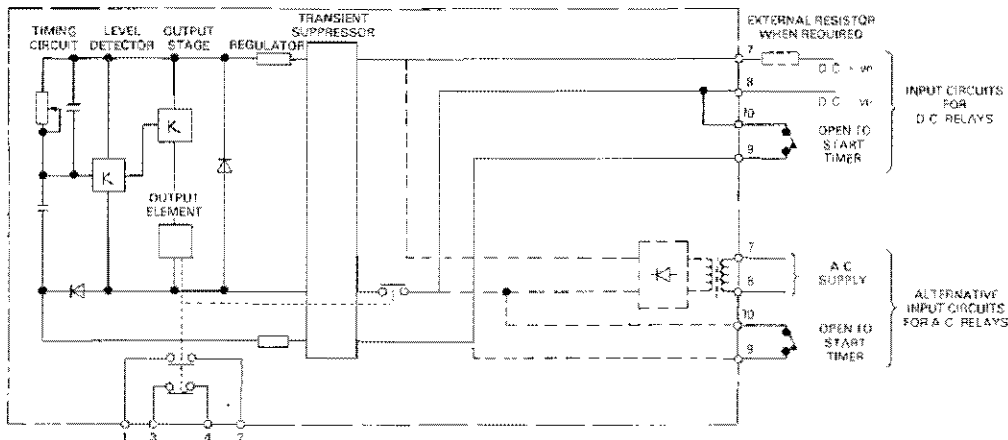
Protection Grade to B.S.142:1966

	Make and carry continuously	Make and carry for 3 seconds	Break
a.c.	1250 VA with maxima of 5 amps and 660 volts	7500 VA with maxima of 30 amps and 660 volts	1250 VA with maxima of 5 amps and 660 volts
d.c.	1250 watts with maxima of 5 amps and 660 volts	7500 watts with maxima of 30 amps and 660 volts	100 watts (resistive) 50 watts (inductive) with maxima of 5 amps and 660 volts

Industrial Grade. Make and break 50 watts resistive with maxima of 0.455 amp and 110 volts for minimum of 3 million operations.



TYPICAL CIRCUIT DIAGRAM FOR TYPE VTT11 RELAY (DELAYED PICK-UP)
Terminal numbers relate to relays in $\frac{1}{2}$ D drawout cases.



TYPICAL CIRCUIT DIAGRAM FOR TYPE VTT12 (DELAYED DROP-OFF)
Terminal numbers relate to relays in $\frac{1}{2}$ D drawout cases.

OPERATION INDICATOR

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

INSULATION

The unit will withstand 2kV a.c. r.m.s. 50 Hz for one minute between all circuits and the case and between all circuits not intended to be connected together. It will also withstand 1kV a.c. r.m.s. 50 Hz for one minute between normally open contacts.

CASES

Types VTT11 and VTT12 units are supplied in $\frac{1}{2}$ size drawout ($\frac{1}{2}$ D) or $\frac{1}{2}$ size moulded ($\frac{1}{2}$ N) cases. Type VTT21 units are supplied in size 1 drawout cases only. All these cases are available for flush or projecting mounting.

The drawout case has the advantage of ease of maintenance and testing and is fitted with a filter which equalises pressure inside and outside without admitting dust.

All cases are finished phenolic black as standard. Timers for use in exceptionally severe environments can be finished to B.S.2011:20/50/56 at extra cost; standard timers are finished to B.S.2011:20/40/4 and are satisfactory for normal tropical use.

Case	Maximum Overall Dimensions					
	Height		Width		Depth*	
	ins.	mm	ins.	mm	ins.	mm
$\frac{1}{2}$ N	4 $\frac{1}{8}$	124	6	153	5 $\frac{1}{8}$	130
$\frac{1}{2}$ D	6 $\frac{1}{8}$	154	6 $\frac{1}{8}$	170	7 $\frac{1}{8}$	197
1D	9 $\frac{3}{8}$	233	6 $\frac{1}{8}$	170	7 $\frac{1}{8}$	197

*Add 2" (51 mm) for maximum length of 2 BA terminal studs.

Dimensioned drawings of case outlines, panel cut-outs and mounting details are available on request.

INFORMATION REQUIRED WITH ORDER

Unit type
Timing range
Voltage rating
Contact type and combination
Operation indicator—if required
Case type and mode of mounting

Our policy is one of continuous product development and the right is reserved to supply equipment which may vary slightly from that described.

GEC Measurements

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