

THERMOSTATIC

AMPERITE

DELAY RELAYS

GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT

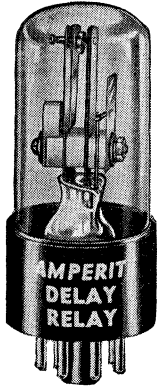


AMPERITE THERMOSTATIC DELAY RELAYS

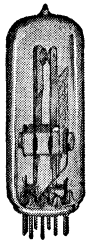
Amperite Thermostatic Delay Relays are actuated by a heater . . . can therefore be used on A.C., D.C., or pulsating current. Being hermetically sealed, Amperite Relays are not affected by altitude, moisture, or other atmospheric conditions.

CIRCUITS: At the present time only SPST is available — normally open or normally closed.

HEATER VOLTAGES: Relays are available with heater voltages from 2.5 to 115 V. For short delays (1 to 10 seconds) a low voltage heater, preferably 6.3 V. is recommended. **STANDARD HEATER VOLTAGES:** 6.3, 26 (for 22-30 V.), 115 V. Other voltages available are 2.5, 5.0, 12.0 and 50 V. For 220 V., use a 115 V. relay with a dropping resistor.



STANDARD

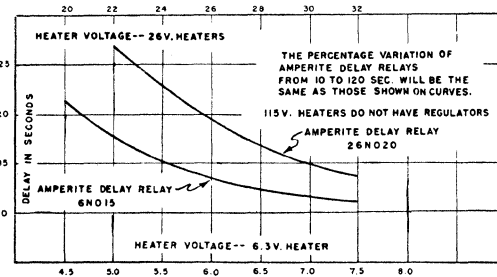


MINIATURE

EFFECT OF HEATER VOLTAGE VARIATION ON DELAY

FIGURE 1 — Effect of change in heater voltage on delay in seconds. Only low voltage heaters (2.5 to 26 V.) incorporate heater voltage regulations as shown in this diagram.

For 22 to 30 V. supply: We recommend Amperite Delay Relays with 26 V. heaters for airplanes and similar power supplies. These heaters are regulated for battery variation of 22 to 30 V. as shown in this diagram.



STANDARD HEATER VOLTAGES: Amperite Delay Relays with low voltage heaters such as 2.5, 5.0, 6.3, 12 and 26 V. are designed with automatic voltage regulation of the heater to compensate for line voltage variation. The effect of voltage variation on a typical relay is shown in Fig. 1. Without regulation, the delay would vary as the square of the supply voltage variation. 115 V. heaters CANNOT be supplied with heater voltage regulation.

HEATER WATTAGE: The wattage consumed by the heater is approx. 2 W. Flashers approx. 1 W. All Heaters may be operated continuously. Life, 5000 hours minimum.

CONTACT RATING

	Delay	Contract Rating		Voltage Breakdown	
		Non-Inductive		Contact-to-Contact	Heater-to-Contact
STANDARD RELAYS	2 to 10 Sec.	115V — 3a AC		250V	500V
	15 to 180 Sec.	115V — 3a AC 220V — 1a AC		1000V 1000V	1500V 1500V
MINIATURE RELAYS	2 to 10 Sec.	115V — 2a AC		250V	500V
	15 to 180 Sec.	115V — 2a AC 220V — 1a AC		1000V 1000V	1500V 1500V

FLASHERS have contact rating of 115V — ½a AC, non-inductive.

AMBIENT TEMPERATURES: Relays are compensated for temperatures of -55° to +70°C. Tolerances given are 20°C. Ambient temperature tolerances depend on type. Low voltage heaters 26V or less have much better ambient compensation than high voltage heaters.

LIFE of any individual relay will depend on the service the contacts are subjected to. With a 115 V. — 2A A.C. non inductive load the contacts will withstand at least 250,000 operations. The heater can be operated continuously. Heaters will not be damaged by a 50% overload in voltage for short durations.

DELAYS AVAILABLE: From 2 to 180 seconds. Relays can be used in series to obtain longer delays. The delay of any individual relay can be increased up to 30% by using a resistor in series with the heater. Relays with short delays such as 2 to 5 seconds can be increased 150%.

FLASHERS: Normally closed relays are supplied as flashers. They are available from 30 to 90 flashes per minute, and are furnished in 6, 26, and 115V heaters, as standard types.

INDUCTIVE A.C. LOADS: When breaking an inductive A.C. load, use a condenser of .01 to .1 mfd. across contacts.

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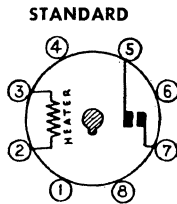
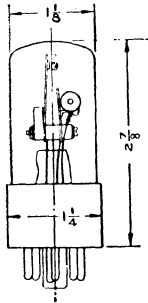
DELAY RELAYS

GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT



BREAKING D.C. CURRENT: When Relay contacts open D.C. Current above 50 volts, a condenser with a resistor in series with the condenser must be connected across the contacts. The following condenser values are approximate.

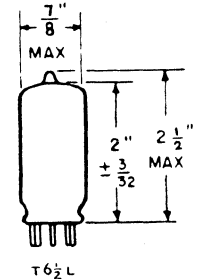
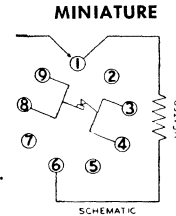
	50 V. D.C.	115 V. D.C.	230 V. D.C.
0 to .5 Amps.....	None	.1 MF	.25 MF
.5 to 1.5 Amps.....	"	.25 "	.25 "
1.5 to 3 Amps.....	.25 MF	1 "	.5 "



Standard Radio Octal:
Prongs 2-3-heater;
Prongs 5-7-contacts.

BASE WIRING:

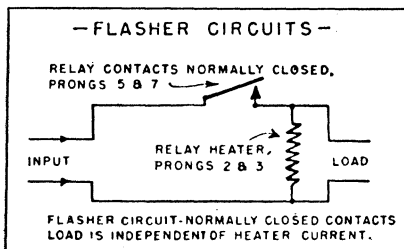
9-Pin Miniature:
Prongs 1-6-heater; Prongs 3-4-1 contact; Prongs 8-9-2nd contact.



STANDARD AND MINIATURE TYPES OF AMPERITE DELAY RELAYS AND FLASHERS... List \$4.00 ea.

MINIATURE TYPES: Designated by letter T. (e.g. 6N05T) Types shown in Bold Type are the more popular types, and are more readily available.

Delay-Seconds	Tolerance Seconds at 20°C	NORMALLY OPEN CONTACTS						NORMALLY CLOSED CONTACTS					
		HEATER VOLTAGES						HEATER VOLTAGES					
		2.5 V.	5.0 V.	6.3 V.	12 V.	26 V. (22-30)	115 V.	2.5 V.	5.0 V.	6.3 V.	12 V.	26 V. (22-30)	115 V.
2	± 1	2N02	5N02	6N02	12N02	26N02	115N02	2C2	5C2	6C2	12C2	26C2	115C2
3	± 1	2N03	5N03	6N03	12N03	26N03	115N03	2C3	5C3	6C3	12C3	26C3	115C3
5	± 2	2N05	5N05	6N05	12N05	26N05	115N05	2C5	5C5	6C5	12C5	26C5	115C5
8	± 3	2N08	5N08	6N08	12N08	26N08	115N08	2C8	5C8	6C8	12C8	26C8	115C8
10	± 3	2N010	5N010	6N010	12N010	26N010	115N010	2C10	5C10	6C10	12C10	26C10	115C10
15	± 3	2N015	5N015	6N015	12N015	26N015	115N015	2C15	5C15	6C15	12C15	26C15	115C15
20	± 4	2N020	5N020	6N020	12N020	26N020	115N020	2C20	5C20	6C20	12C20	26C20	115C20
30	± 8	2N030	5N030	6N030	12N030	26N030	115N030	2C30	5C30	6C30	12C30	26C30	115C30
45	± 10	2N045	5N045	6N045	12N045	26N045	115N045	2C45	5C45	6C45	12C45	26C45	115C45
60	± 12	2N060	5N060	6N060	12N060	26N060	115N060	2C60	5C60	6C60	12C60	26C60	115C60
75	± 15	2N075	5N075	6N075	12N075	26N075	115N075	2C75	5C75	6C75	12C75	26C75	115C75
90	± 15	2N090	5N090	6N090	12N090	26N090	115N090	2C90	5C90	6C90	12C90	26C90	115C90
120	± 30	2N0120	5N0120	6N0120	12N0120	26N0120	115N0120	2C120	5C120	6C120	12C120	26C120	115C120
150	± 30	2N0150	5N0150	6N0150	12N0150	26N0150	115N0150	2C150	5C150	6C150	12C150	26C150	115C150
180	± 40	2N0180	5N0180	6N0180	12N0180	26N0180	115N0180	2C180	5C180	6C180	12C180	26C180	115C180



Normally closed flashers are standard, and are indicated by the letter "F." The number following letter "F" denotes flashes per minute. For example a 6F30 flasher, has 6.3V heater, normally closed for 30 flashes with a ± 10 flashes per minute tolerance. A 6F30T, would be the same type but in 9-pin miniature. Flashers are available from 30 to 90 Flashes per minute with tolerances as shown in the chart below:

Tolerance FPM - 20°C	Standard Flashers Available		
± 10	6F30	26F30	115F30
± 12	6F45	26F45	115F45
± 15	6F60	26F60	115F60
± 15	6F75	26F75	115F75
± 20	6F90	26F90	115F90

Flashers operate approximately 1/3 on, 2/3 off. The percentage time on can be increased by reducing the voltage of the heater.

FLASHERS have contact rating of 115V - 1/2a AC, non-inductive.