

**THERMOSTATIC**

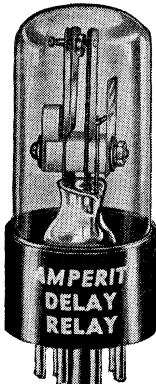
**AMPERITE**

**DELAY RELAYS**

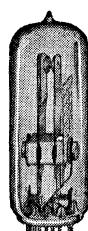
GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT



## **AMPERITE THERMOSTATIC DELAY RELAYS**



**STANDARD**



**MINIATURE**

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.

### **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 regulation 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**

		Contract Rating	Voltage Breakdown	
	Delay	Non-Inductive	Contact-to-Contact	Heater-to-Contact
<b>STANDARD</b> <b>RELAYS</b>	2 to 10 Sec.	115V — 3a AC	250V	500V
	15 to 180 Sec.	115V — 3a AC 220V — 1a AC	1000V 1000V	1500V 1500V
<b>MINIATURE</b> <b>RELAYS</b>	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 —  $\frac{1}{2}$ a AC, non-inductive.

**AMBIENT TEMPERATURES:** Relays are compensated for temperatures of  $-55^{\circ}$  to  $+70^{\circ}$ C. Tolerances given are  $20^{\circ}$ 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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**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 "

