

Amperex[®]

COMPUTER COMPONENTS

- Reed Switches
- Temperature Compensated Crystal Oscillators
- Trigger Tubes

Amperex[®] Electronic Corporation...

is a pioneer in the development of industrial electronic components and for four decades has been producing high quality devices for industrial, military and commercial equipment manufacturers.

Creative engineering and precision manufacturing have been responsible for a steady growth in the facilities and operations of Amperex. Founded in 1932, the Company originally manufactured special purpose tubes. Today, the Hicksville Division of Amperex manufactures and markets computer components, instrumentation components, microwave devices, scientific products, industrial power components, and communication components.

This catalog is one in a series of six containing condensed technical data on these products. The contents of this catalog as well as the others in the series is listed below:

COMMUNICATION COMPONENTS

RF POWER TRANSISTORS
RF POWER TUBES (LARGE)
RF POWER TUBES (SMALL)
TV TETRODE CAVITIES
TEMPERATURE COMPENSATED—
CRYSTAL OSCILLATORS
VACUUM CAPACITORS
MICROWAVE DIODES AND ASSEMBLIES
RF CIRCULATORS
RECTIFIERS
KLYSTRONS

SCIENTIFIC PRODUCTS

PHOTOMULTIPLIER TUBES
RADIATION COUNTER TUBES
CHANNEL ELECTRON MULTIPLIERS
COAXIAL THERMOCOUPLE AND HEATER WIRE
SEMICONDUCTOR RADIATION DETECTORS
RECTIFIER STACKS
X-RAY COMPONENTS

MICROWAVE DEVICES

MICROWAVE DIODES AND ASSEMBLIES
INDUSTRIAL MAGNETRONS
RADAR TUBES
RECTIFIER STACKS
KLYSTRONS

INDUSTRIAL POWER COMPONENTS

RF POWER TUBES (LARGE)
VACUUM CAPACITORS
RECTIFIER STACKS
INDUSTRIAL MAGNETRONS
MERCURY RECTIFIERS
THYRATRONS
IGNITRONS

INSTRUMENTATION COMPONENTS

TEMPERATURE COMPENSATED—
CRYSTAL OSCILLATORS
REED SWITCHES
TRIGGER TUBES
PREMIUM QUALITY TUBES

COMPUTER COMPONENTS

REED SWITCHES
TEMPERATURE COMPENSATED—
CRYSTAL OSCILLATORS
TRIGGER TUBES

The Hicksville Division...



occupies seven acres in Hicksville, Long Island, New York and contains 140,000 square feet of manufacturing space and 17,000 square feet devoted to research and development activities.

Amperex is a wholly owned subsidiary of the North American Philips Corporation, an affiliation that supplements its general capabilities in electronics technology and gives it ready access to the basic product technology and international research facilities of the renowned N. V. Philips of Holland.

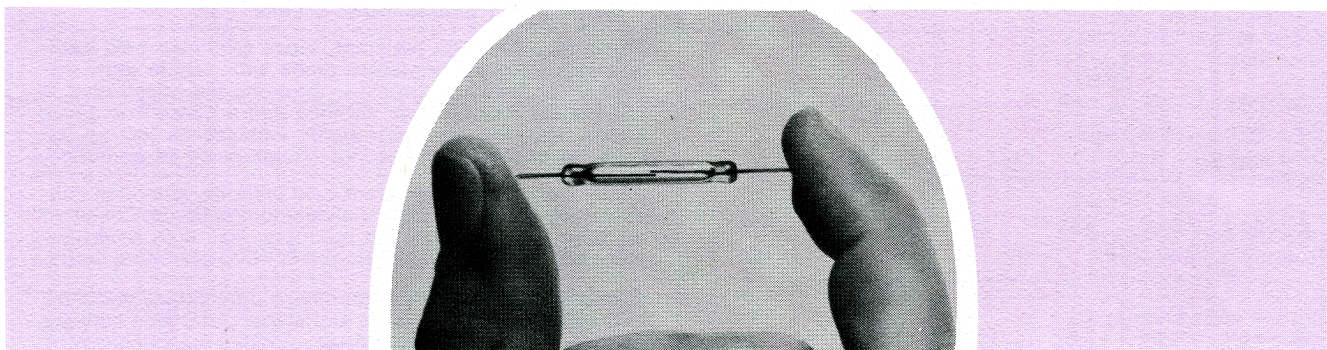
Reed Switches

TYPE	CONTACT MATERIAL	CONTACT RATING VOLT/AMP	SWITCHED		OPERATING A/T	INITIAL CONTACT RESISTANCE MILLIOHMS	MINIMUM OPERATIONS ***	GLASS LENGTH INCHES
			VOLTAGE	CURRENT				
RI-12/01	Gold	5	65	100mA	28-62*	50	5 x 10 ⁶	1.11
RI-20	Ruthenium	10	100	500mA	17-32**	150	10 x 10 ⁶	0.56
RI-30	Ruthenium	10	150DC 115AC	200mA	19-44**	120	10 x 10 ⁶	0.85

*1" Long Coil

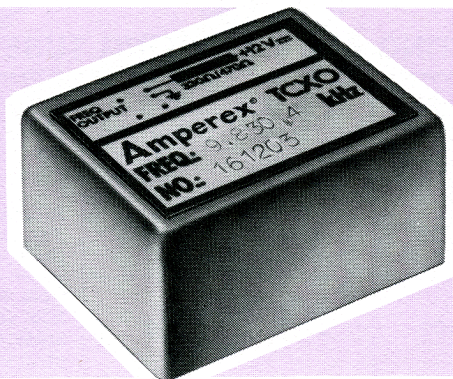
**1/2" Long Coil

***Full Load



Temperature Compensated Crystal Oscillators

TYPE NO.	FREQ. RANGE	FREQ. TOLERANCE	STABILITY		FREQ. ADJ.	DIMENSIONS (IN.)		
			TEMP. RANGE	AGING		LENGTH	WIDTH	HEIGHT
4322-190	4.5-15 MHz	±2 x 10 ⁻⁶	-30°C to +60°C	±1 x 10 ⁻⁶ /year	Int. Capacitor	.984	1.28	.591
4322-191	4.5-15 MHz	±2 x 10 ⁻⁶	-30°C to +60°C	±1 x 10 ⁻⁶ /year	Ext. Capacitor	.984	1.28	.591
4322-195	20-60 MHz	±2 x 10 ⁻⁶	-30°C to +60°C	±1 x 10 ⁻⁶ /year	Int. Capacitor	.984	1.28	.591
4322-196	20-60 MHz	±2 x 10 ⁻⁶	-30°C to +60°C	±1 x 10 ⁻⁶ /year	Ext. Capacitor	.984	1.28	.591



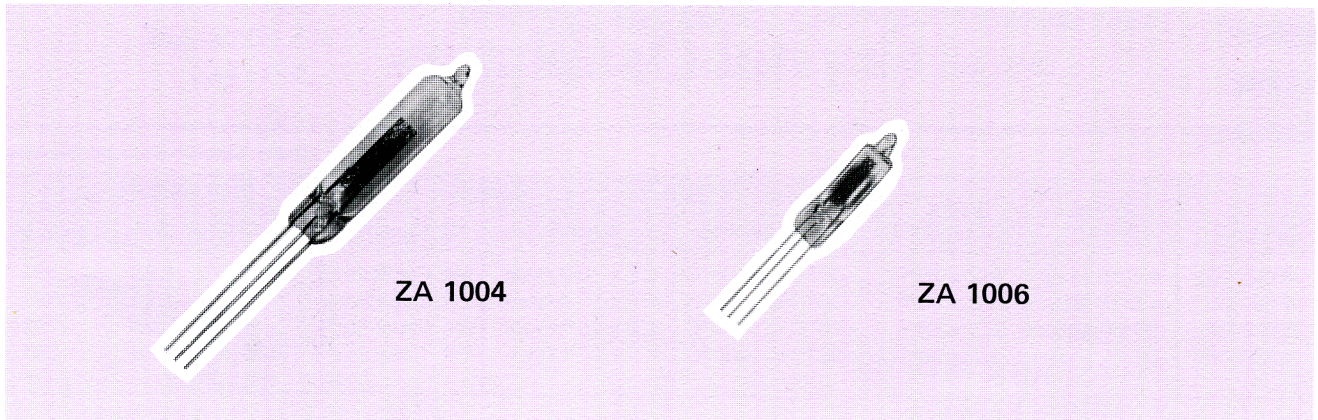
Trigger Tubes

INDICATOR DIODES

TYPE NO.	BREAKDOWN VOLTAGE V_{ign}		MAINTAINING VOLTAGE V_m		CATHODE CURRENT I_k (mA)	DESCRIPTION
	Max (v)	Min (v)	Max (v)	Min (v)		
✓ ZA 1001	135	120	95	91	1.5	Shock and vibration resistant cold cathode, gas filled sub-miniature diode. Designed for switching and stable saw-tooth generator circuits. Operable thru audio frequency range. May be used in frequency divider chains, as in electronic organs.
✗ ZA 1002	175	165	109	103	2.0	Switching and light diode intended for logic functions both in sensing and programming circuits.
✗ ZA 1004	90	88	*	*	1.0	Shock and vibration resistant, close tolerance cold cathode, gas filled subminiature diode with visible glow discharge for readout purposes. Contains two electrodes, a rod-shaped molybdenum cathode and a concentric gauze anode. May be used with signal voltages as low as 3.0 volts depending upon readout circuit mode of operation.
✗ ZA 1005	138	108	86	70	5.0**	Shock and vibration resistant cold cathode, gas filled sub-miniature diode with pure molybdenum cathode. Designed for firing silicon controlled rectifiers. Has high peak current capacity and a minimum life of 4000 operating hours.
✗ ZA 1006	183	161	111	103	3	A long-life cold-cathode neon-filled subminiature switching and light diode with a large and stable difference between ignition and maintaining voltage intended for touch control applications, e.g. in variable capacitance diode controlled radio or television tuners. The tube is shock and vibration resistant.

*Extinction Voltage V_{ext} (Min) = 83.5 Volts

**Peak Cathode Current = 250 mA



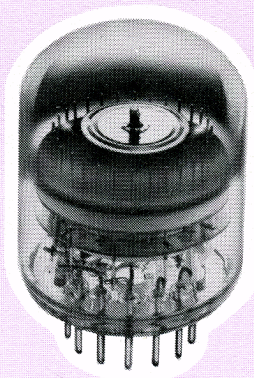
COUNTING AND SELECTING TUBES

TYPE	MAX ANODE SUPPLY VOLTAGE (V)	MAINTAINING VOLTAGE (MAIN CATHODE) (V)	GUIDE VOLTAGE PULSE (V)	CATHODE CURRENT MAX VALUE (μA)	COUNTING RATE (KC)	DESCRIPTION
Z504S	550	195	100	525	5	All glass decade selector and counting tube. Ten main cathodes with separate connections. Counts in either direction.
Z505S	1000	260	100	1 mA	50	Cold cathode, gas filled bi-directional decade selector and counting tube. Ten separate outputs are provided. All glass construction.

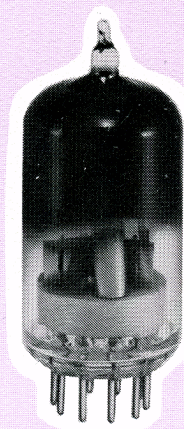
Trigger Tubes (Continued)

TRIGGER TUBES

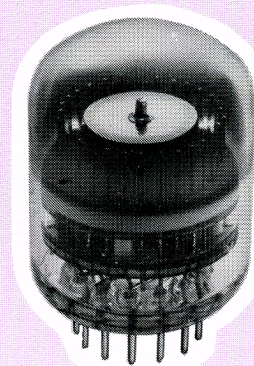
TYPE NO.	ANODE VOLTAGE RANGE (V)	STARTER-TO-CATHODE BREAKDOWN VOLTAGE (V)	ANODE-TO-CATHODE MAINTAINING VOLTAGE (V _m)	ANODE-TO-CATHODE BREAK-DOWN VOLTAGE (V)	RECOM-MENDED PRIMING RESISTOR (MEGOHMS)	CATHODE CURRENT RANGE (MA)	PEAK CATHODE CURRENT (MA)	TYPICAL DC STARTER CURRENT (μa)	MAXIMUM NEGATIVE STARTER CURRENT (μa)	MAXIMUM AMBIENT TEMPERA-TURE (°C)	DESCRIPTION
Z70U/ 7710	200-310	137-153	111-121	>325	18	2-4	16	20	150	70	Subminiature tube with priming cathode and positive starter voltage, for DC circuits. It may be used as an electronic switching element in in counter circuits and in logic units. Other applications are in welding timers, touch controls.
Z70W/ 7709	200-310	137-153	111-121	>325	18	2-4	16	30	150	70	Subminiature tube with priming cathode and positive starter voltage for DC circuit.
Z803U/ 6779	170-290	128-137	105	>290	10	25 (max)	100	50	—	70	Stable trigger striking characteristic for position triggering.
Z805U/ 7714	250-450 dc 180-275 ac (rms)	137-155 dc 98-110 ac (rms)	118-128	>500	—	5-25	150	50	—	70	Miniature relay tube for ac circuits, short ignition delay and excellent high voltage properties.



Z504S



Z805U/7714



Z505S

CALL YOUR NEAREST NORTH AMERICAN PHILIPS ELECTRONIC COMPONENT CORP. FIELD ENGINEERING OFFICE FOR PROMPT, INFORMED, PROFESSIONAL SERVICE.

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