



TYPE UX-973

MERCURY VAPOR GRID-CONTROLLED RECTIFIER ENGINEERING INFORMATION

GENERAL RATINGS

Number of Electrodes 3
 Filament Oxide Coated
 Voltage 5.0 volts
 Current 6.75 amps.
 Heating Time* 45 sec.

Single Phase—Half Wave Circuit—1 Tube

Anode Voltage:

Maximum Peak Inverse Voltage 3000 volts
 Maximum Peak Forward Voltage 3000 volts

Maximum Anode Current:

Instantaneous 10.0 amp.
 Average 2.5 amp.
 Surge (should not last longer than 1 sec.).....90.0 amp.

Maximum Time of Averaging Anode Current.....15 sec.

Maximum Grid Current:

Instantaneous† 1.0 amp.
 Average 25 amp.

Tube Voltage Drop 10-15 volts

Approximate Starting Characteristics at Cond. Mercury

Temp. of 50° C.

D. C. Anode Voltage	Grid Voltage
70	0
100	-3
1000	-5.5

Temperature Limits:

Condensed Mercury Temperature 40° to 80° C.
 Deionization Time—approximate 1000 microsec

Ionization Time 10 microsec

MOTOR CONTROL, WELDING, AND GENERAL INDUSTRIAL USE

Anode Voltage:

Maximum Peak Inverse Voltage 1000 volts
 Maximum Peak Forward Voltage 1000 volts

Maximum Anode Current:

Instantaneous 10.0 amp.
 Average 3.0 amp.
 Surge (Should not last longer than 1 sec.).....90.0 amp.

Dimensions:

Maximum Length 9 1/8 inches
 Diameter 2 5/16 inches

Bulb T-18

Cap Medium Metal

Type of Cooling Air

Base Medium 4-Pin

* The filament should be allowed to come up to operating temperature before the plate voltage is applied.

† When operating at a frequency of less than 25 cycles, the maximum instantaneous current is reduced to twice the average current rating.

Return leads from anode and grid circuits should be connected to the center tap of the filament transformer winding when A-C is used on the filament. If D-C is used the return should be made to the negative filament terminal.

All mercury vapor or gas filled tubes require protective resistances in the grid and anode circuits to limit the current in these circuits to the rated values.

INSTALLATION

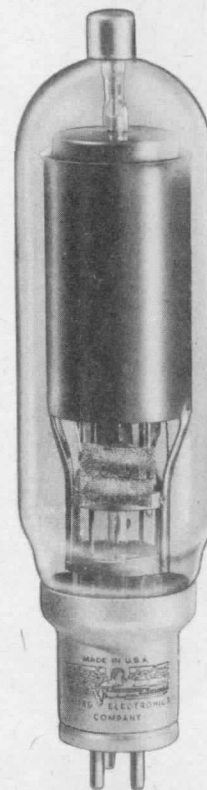
The base of the UNITED UX-973 is designed for mounting in a standard 4-Pin Jumbo socket. The tube should always be mounted vertically with ample air space provided for ventilation. The ambient temperature should not be less than 25° C (77° F) and not more than 65° C (149° F) for the maximum peak inverse voltage. When the maximum ambient temperature exceeds these limits, forced ventilation should be used.

The filament of the UX-973 should be operated on alternating current at the rated value of 5.0 volts. The socket should make good contact to the tube pins and adequate current-carrying capacity leads to the secondary winding of the power transformer should be used. Operation of the filament at less than the rated voltage may result in a high internal voltage drop with subsequent loss of emission. A voltmeter should be connected permanently across the filament circuit at the socket terminals in order that the filament voltage can be maintained at 5.0 volts.

Because the mercury may be splashed on the tube elements due to shipment or handling, the filament of the UX-973 should be operated at rated voltage for approximately 3 minutes without plate voltage in order to distribute the mercury properly when the tube is first placed in service. The above procedure need not be repeated unless the tube is removed from the socket and during handling the mercury becomes splashed on the tube elements.

The condensed mercury temperature should be at least 25° C before the plate voltage is applied. This may be ordinarily accomplished by introducing a time lag of at least 45 seconds between the application of the filament and the plate voltages. In event that arc-back should occur when the plate voltage is applied, the pre-heating time of the filament should be increased.

All ratings given are for continuous service. Higher ratings are permissible for intermittent operation. Additional data will be furnished upon request.



Type UX-973 has attained great favor in motor control, welding, and general industrial applications.

