

Ignitron

**WATER-COOLED, METAL-JACKETED, MERCURY-POOL-CATHODE
TYPE HAVING MOUNTING PLATE FOR THERMOSTATIC CONTROL**

**For Intermittent-Power-Rectifier and
Resistance-Welding-Control Applications**

GENERAL DATA

Electrical:

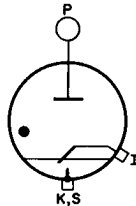
Cathode Excitation.	Cyclic
Cathode-Spot Starting	By Ignitor
Minimum Requirements for Cathode Excitation: ^a	
Peak ignitor voltage required to fire	200 volts
Peak ignitor current required to fire	30 amp
Starting time at required ignitor voltage or current.	100 μ sec
Peak Tube Voltage Drop at peak anode amperes =	
6800.	28 volts
440	14 volts

Mechanical:

Operating Position.	Vertical, flexible lead up
Maximum Overall Length (Including flexible lead).	26-9/16"
Maximum Radius (Including water connections).	3-5/8"
Weight (Approx.).	10 lbs
Terminal Diagram:	

P - Anode
Terminal
(Flexible
lead)

K - Cathode
Terminal
(Bar oppo-
site anode
terminal)



I - Ignitor
Terminal
(Within
jacket
skirt at
cathode
end)

S - Shell

Thermal:

Cooling:

Type.	Water
Minimum inlet-water temperature	0 $^{\circ}$ C
Maximum cooling-system temperature (Measured at thermostat mount):	
For Intermittent-Power-Rectifier Service.	45 $^{\circ}$ C
For Resistance-Welding-Control Service at rms anode supply volts =	
600	45 $^{\circ}$ C
500	50 $^{\circ}$ C
250	55 $^{\circ}$ C



Typical cooling requirements for Resistance-Welding-Control Service at rms anode supply volts = 500:

Inlet Water Temperature (°C)	Required Water Flow (gpm)	Pressure Drop (psi)	
With 100% load:			
15	3/8	0.6	
30	1/2	0.9	
40	1-1/4	4	
With 50% load:			
15	1/8	0.2	
30	1/4	0.4	
40	1/2	0.9	
Water-temperature rise with 100% load at flow of 1 gpm. 5 °C			
Temperature Rise (Approx.), inlet water to thermostat, with 100% load at flow of 1 gpm 4 °C			

INTERMITTENT POWER-RECTIFIER SERVICE

Maximum Ratings, Absolute-Maximum Values:

For zero phase-control angle and frequencies from 25 to 60 cps

PEAK ANODE VOLTAGE:		
Forward	500 max.	volts
Inverse	500 max.	volts
ANODE CURRENT:		
Peak	1600 max.	amp
Average	100 max.	amp
AVERAGING TIME.	6 max.	sec
PEAK FAULT ANODE CURRENT.	6000 max.	amp
FAULT-ANODE-CURRENT DURATION.	0.15 max.	sec

RESISTANCE-WELDING-CONTROL SERVICE

Maximum Ratings, Absolute-Maximum Values:

For two tubes in inverse parallel circuit, zero phase-control angle, frequencies from 25 to 60 cps, and rms supply voltages from 250 to 600 volts

DEMAND.	1200 max.	kva
Corresponding average anode current (Per tube).		
	75.6 max.	amp
AVERAGE ANODE CURRENT (Per Tube) ^b	140 max.	amp
Corresponding demand.	400 max.	kva
AVERAGING TIME at rms supply volts =		
600 ^b	8.75 max.	sec
250 ^b	21 max.	sec



RMS ANODE CURRENT (Per Tube)^b See *Rating Chart*
PEAK FAULT ANODE CURRENT (Per Tube) Limited to 280%
of maximum RMS Anode Current

IGNITOR

Maximum Ratings, Absolute-Maximum Values:

PEAK IGNITOR VOLTAGE:
Positive. Equal to anode volts
Negative. 5 max. volts

IGNITOR CURRENT:
Peak. 100 max. amp
Average 1 max. amp
RMS 10 max. amp

AVERAGING TIME. 5 max. sec

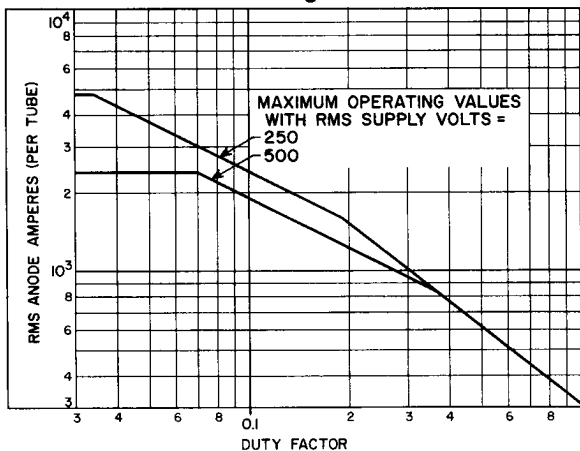
^a Ignition will occur if either the minimum peak ignitor voltage is applied or the minimum peak ignitor current flows for the minimum starting time.

^b with the use of log-log graph paper, straight-line interpolation between tabulated points may be used to determine intermediate maximum ratings for RMS Anode Current and Average Anode Current or Averaging Time and RMS Supply Voltage.



1052A

ANODE-CURRENT RATING CHART Resistance-Welding-Control Service



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