1052A

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:

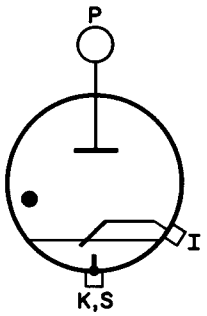
Cathode Excitation		Cyclic
Cathode-Spot Starting		By Ignitor
Minimum Requirements for Cathode Excitation:[a]		
Peak ignitor voltage required to fire	200	volts
Peak ignitor current required to fire	30	amp
Starting time at required ignitor voltage or current	100	μsec
Peak Tube Voltage Drop at peak anode 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 opposite anode terminal)



I – Ignitor Terminal (Within jacket skirt at cathode end)
S – Shell

Thermal:

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

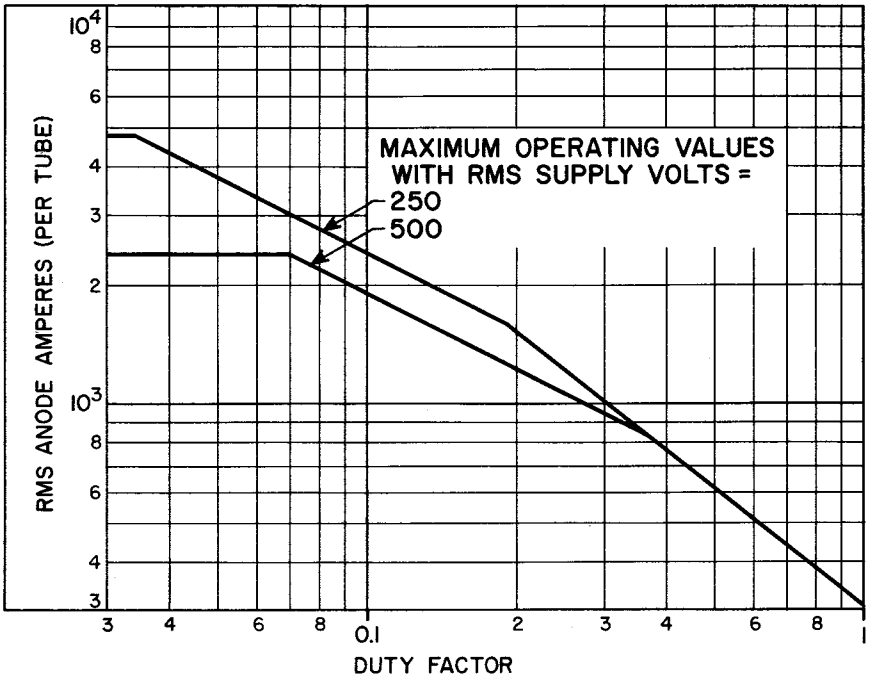
Maximum Ratings, *Absolute-Maximum Values:*

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.

ANODE-CURRENT RATING CHART
Resistance-Welding-Control Service



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