Sponsor:
Westinghouse Electric Corp.

Release No. 787
September 28, 1949

POOL TUBE DATA SHEET

TYPE NO. 5821

Type of Pool Tube Ignitron

Principle Use Frequency Changer Resistance Welding Control

Description: The 5821 ignitron is a sealed, stainless steel jacketed, water-cooled, mercury pool tube designed primarily for control of frequency changer resistance welders. The tube contains baffles needed for good performance in this application. The ignitor is adapted to intermittent service.

ELECTRICAL DATA GENERAL

Type Cathode Excitation	Cyclic	
Type Cathode Spot Starting	Ignitor	
Number of Electrodes		
Main Anodes	1	
Main Cathodes	1	
Ignitors	1	
Arc Drop at 900 Peak Amperes	25	Volts
Cathode Excitation Requirements:		
Ignitor Voltage Required to Fire	200	Volts
Ignitor Current Required to Fire	30	Amps.
Starting Time at Required Voltage or Current	100	Microseconds

MECHANICAL DATA GENERAL

Envelope Material	Metal	
Overall Length	23-3/4	Max. Inches
Overall Width exclusive of water connections	2-3/4	Max. Inches
Net Weight (See outline drawing for details)	3.6	Lbs.
Type Cooling	Water	
Water Temperature Rise	4	°C Max.
Pressure Drop	1.8	Lbs./Sq.In. Max.

MAXIMUM RATINGS

Maximum Peak Anode Voltage			
Inverse	1200	1500	Volts
Forward	1200	1500	Volts
Maximum Peak Anode Current (1)	900	720	Amps.
Corresponding Average Anode Current (1)	9.0	7.2	Amps.

MAXIMUM RATINGS (Continued)

Maximum Average Anode Current (1)	37.5	30	Amps.
Corresponding Peak Anode Current (1)	225	180	Amps.
Maximum Averaging Time	8.3	8.3	Seconds
I_{av}/I_{peak} (Max. Averaging time 0.2 sec.)	.166	.166	Max.
I_{fault}/I_{peak}	12.5	12.5	Max.
Maximum Duration of Fault Current	0.15	0.15	Sec.
Frequency	60	60	Cps

Note 1 - Straight line interpolation on log-log paper is allowed between corresponding points. These ratings are on the basis of operation at no phase retard. At any value of phase retard all current ratings are reduced in direct proportion to the average output voltage.

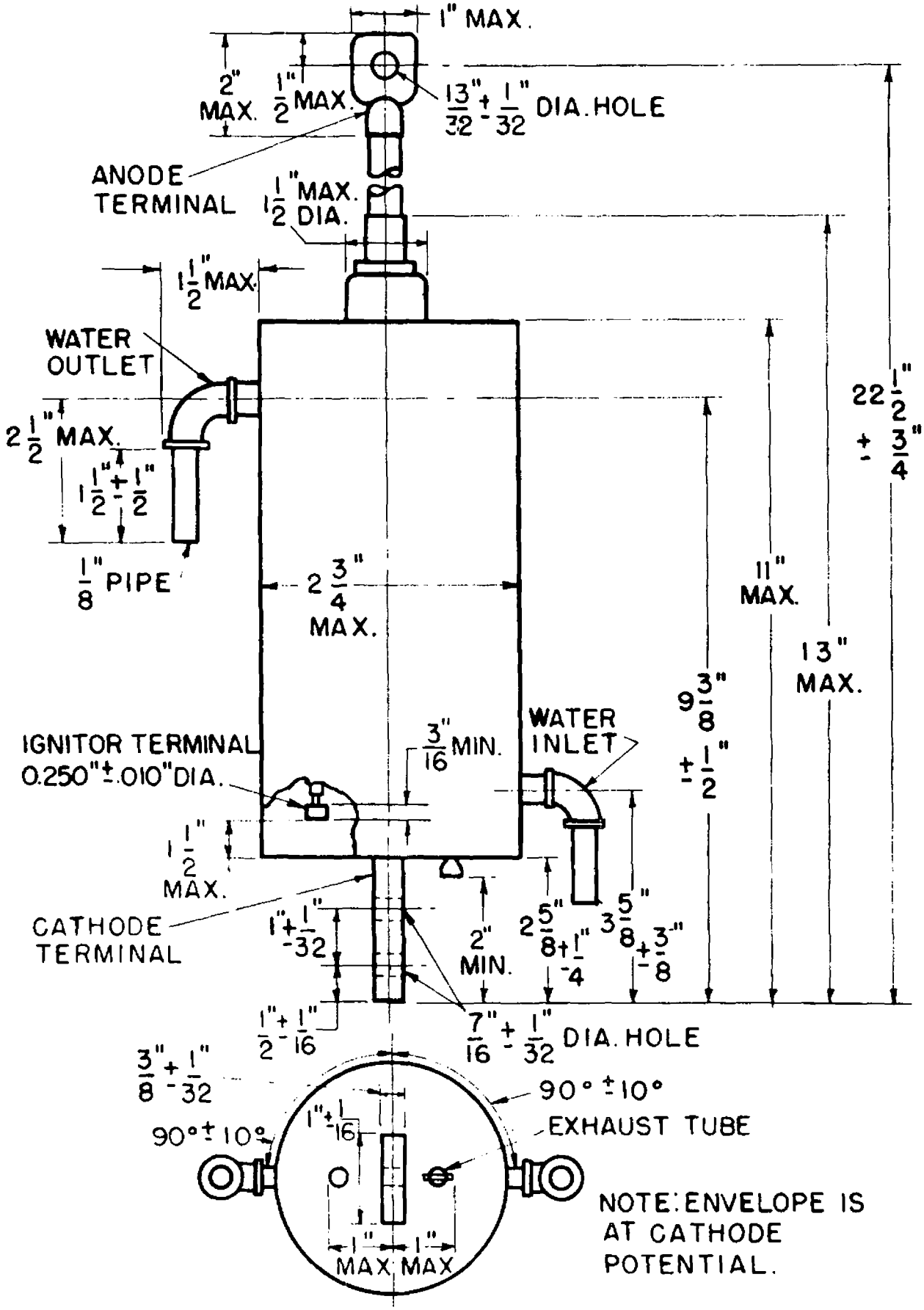
Ignitor

Maximum Voltage		
Positive	Anode	Volts
Negative	5	Volts
Maximum Current		
Peak	100	Amps.
Root Mean Square	10	Amps.
Average	1	Amp.
Maximum Averaging Time	5	Sec.

Thermal

Maximum Outlet Water Temperature	35	°C
Minimum Inlet Water Temperature	10	°C
Minimum Water Flow	1.0	Gpm

5821


1" MAX.
2" MAX.
1/2" MAX.
13/32" ± 1/32" DIA. HOLE
ANODE TERMINAL
1 1/2" MAX. DIA.
1 1/2" MAX.
WATER OUTLET
2 1/2" MAX.
1 1/2" ± 1/2"
1/8" PIPE
2 3/4" MAX.
22 1/2" ± 3/4"
11" MAX.
13" MAX.
9 3/8" ± 1/2"
WATER INLET
IGNITOR TERMINAL 0.250" ± .010" DIA.
3/16" MIN.
1 1/2" MAX.
CATHODE TERMINAL
1" ± 1/32"
2" MIN.
2 5/8" ± 1/4"
3 5/8" ± 3/8"
1/2" ± 1/16"
7/16" ± 1/32" DIA. HOLE
3/8" ± 1/32"
90° ± 10°
EXHAUST TUBE
90° ± 10°
1" ± 1/16"
1" MAX.
1" MAX.
NOTE: ENVELOPE IS AT CATHODE POTENTIAL.