

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

MECHANICAL DATA GENERAL

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

MAXIMUM RATINGS

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

MAXIMUM RATINGS (Continued)

Maximum Average Anode Current (1)	<u>37.5</u>	<u>30</u>	Amps.
Corresponding Peak Anode Current (1)	<u>225</u>	<u>180</u>	Amps.
Maximum Averaging Time	<u>8.3</u>	<u>8.3</u>	Seconds
I_{av}/I_{peak} (Max. Averaging time 0.2 sec.)	<u>.166</u>	<u>.166</u>	Max.
I_{fault}/I_{peak}	<u>12.5</u>	<u>12.5</u>	Max.
Maximum Duration of Fault Current	<u>0.15</u>	<u>0.15</u>	Sec.
Frequency	<u>60</u>	<u>60</u>	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	<u>Anode</u>	Volts
Negative	<u>5</u>	Volts
Maximum Current		
Peak	<u>100</u>	Amps.
Root Mean Square	<u>10</u>	Amps.
Average	<u>1</u>	Amp.
Maximum Averaging Time	<u>5</u>	Sec.

Thermal

Maximum Outlet Water Temperature	<u>35</u>	°C
Minimum Inlet Water Temperature	<u>10</u>	°C
Minimum Water Flow	<u>1.0</u>	Gpm

