GL-8205 COAXIAL IGNITRON

AC-CONTROL SERVICE

4800 KILOVOLT-AMPERES

HIGH EFFICIENCY COOLING

Inch

The GL-8205 is a sealed, stainless-steel-jacketed ignitron for a-c control welder service. It is a coaxial-design version of the GL-7151.

Two tubes in an inverse-parallel connection will control 4800 kilovolt-amperes at 250 to 600 volts RMS, 25 to 60 cycles.

In the coaxial construction, current flows through the tube from anode to cathode, then up the tube wall to a coaxial cathode terminal at the top. This current flow provides a magnetic shield which eliminates the arc deflection that the high peak currents possible with this tube might cause in standard-design ignitrons.

Other features of the 8205 include a specially designed water-cooling chamber that provides high-efficiency cooling at the bottom of the tube without increasing the water-pressure drop of the cooling jacket. A thermostat mounting plate, thermally coupled to the mercury-condensing surface of the tube, facilitates attachment of a thermostat to provide either protection against excessive temperature or temperature control through regulation of the water flow.

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Electrodes Main Anodes 1 Main Cathodes 1 Ignitors 1 Arc Drop 1	
At 9600 Amperes Peak	
At 1000 Amperes Peak	Volts

Mechanical

Thermal	
Cooling—Water	
Inlet Water Temperature, minimum0 Outlet Water Temperature, maximum40 Water Flow, minimum10	C C Gallons per Minute
Water flow should be continued for at least one hour after removal of anode power. Maximum Working Water Pressure, Non-	
Shock	Pounds per Square Inch
Water-Cooling Characteristics at Rated Minimum	Flow
Water Temperature Rise at Maximum Cur-	
rent8	C
Water Pressure Drop, maximum1.5	Pounds per Square

AC-Control Service*

Two Tubes in Inverse Parallel, Ratings per Tube

two topes in interse raiding, kallings per taba							
Voltage	Volts RMS	Maximum Averaging Time					
Maximum Demand4800	Kilovolt-	At 250 Volts RMS8.9	Seconds				
	Amperes	At 500 Volts RMS4.5	Seconds				
Corresponding Average Current*486	Amperes	Maximum Peak Fault Current					
Maximum Average Current*900	Amperes	At 250 Volts54,000	Amperes				
Corresponding Demand	Kilovolt-	At 600 Volts	Amperes				
	Amperes	Frequency Range25-60	Cycles per second				
Maximum Demand Current							
Below 500 Volts9600	Amperes						

Cathode Excitation Requirements

Car	noae Excitatio	on Kequirements	
Anode Firing		Ignitor†	
Ignitor Voltage Required to Fire200		Maximum Voltage	
Ignitor Current Required to Fire30	Amperes	Positive—Anode Voltage	
Starting Time at Required Voltage or Current	Microseconds	Negative5	Volts
Separate Excitation		Maximum Current	
Pulse Width		Peak	
Recommended500		RMS10	
Maximum4000		Average	
When the average anode current is greater that		Maximum Averaging Time5	Seconds
the pulse width must not fall below 150 micros	econds.		
Maximum Rate of Rise			
of Ignitor Current	Amperes per		

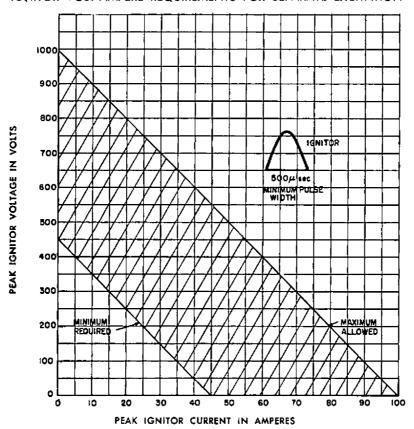
^{*} RMS demand voltage, current, and kilovolt-ampere demand are all on the basis of full-cycle conduction (no phase delay) regardless of whether or not phase control is used. Straight-line interpolation on log-log paper is allowed between corresponding points.

Microsecond

These ratings apply only when anode firing of the ignitor is employed. See curve K69087-72A982 on page 2 for values when separate excitation is used.

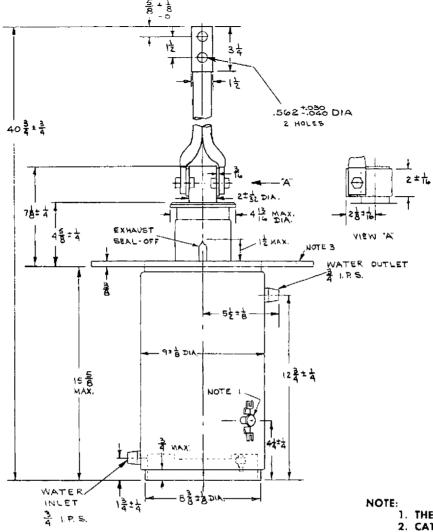


IGNITOR VOLT-AMPERE REQUIREMENTS FOR SEPARATE EXCITATION



THE IGNITOR FIRING CIRCUIT SHOULD BE DESIGNED TO OPERATE WITHIN THE SHADED AREA

K-69087-72A982 9-60



1. THERMOSTAT CONTACT AREA

2. CATHODE CONTACT AREA, 21/2 WIDE 3. TUBE SUPPORT & CATHODE TERMINAL

