GL-8205
COAXIAL IGNITRON

4800 KILOVOLT-AMPERES

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 dece-

Electrical

Electrodes
Main Anodes.......................... 1
Main Cathodes.......................... 1
Igniters................................. 1
Arc Drop  
At 9000 Amperes Peak............... 31 Volts
At 1000 Amperes Peak............... 20 Volts

Thermal

Cooling—Water  
Inlet Water Temperature, minimum.... 0 C
Outlet Water Temperature, maximum... 40 C
Water Flow, minimum................. 10 Gallons per Minute

Water flow should be continued for at least one hour after removal of anode power.
Maximum Working Water Pressure, Non-Shock .................. 100 Pounds per Square Inch

Water-Cooling Characteristics at Rated Minimum Flow  
Water Temperature Rise at Maximum Current .................. 8 C
Water Pressure Drop, maximum ........ 1.5 Pounds per Square Inch

AC-Control Service*

Two Tubes in Inverse Parallel, Ratings per Tube

Voltage .................. 250 to 600 Volts RMS
Maximum Demand ........... 4800 Kilovolt-Amperes
Corresponding Average Current* ...... 486 Amperes
Maximum Average Current* ........ 900 Amperes
Corresponding Demand .......... 1600 Kilovolt-Amperes

Maximum Demand Current  
Below 500 Volts .......... 9600 Amperes RMS

Maximum Averaging Time  
At 250 Volts RMS ............... 8.9 Seconds
At 500 Volts RMS ............... 4.5 Seconds

Maximum Peak Fault Current  
At 250 Volts ................. 54,000 Amperes
At 600 Volts ................. 22,400 Amperes
Frequency Range .............. 25-60 Cycles per second

Cathode Excitation Requirements

Anode Firing
Ignitor Voltage Required to Fire ...... 200 Volts
Ignitor Current Required to Fire ...... 30 Amperes
Starting Time at Required Voltage or Current ........... 100 Microseconds

Separate Excitation
Pulse Width
Recommended .................. 500 Microseconds
Maximum .................. 4000 Microseconds

When the average anode current is greater than 20 amperes the pulse width must not fall below 150 microseconds.

Maximum Rate of Rise of Ignitor Current ........... 2.5 Amperes per Microsecond

* 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.

† 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.