GL-7179

IGNITRON

RECTIFIER SERVICE - 670 AMPERES
TWO IGNITORS
AUXILIARY ANODE

DESCRIPTION AND RATING

The GL-7179 is a 12-inch single-grid igniton designed for industrial rectifier service. In such applications, six tubes in a double-wye circuit will supply 1000 kilowatts continuously at 250 volts d-c. In addition it will withstand the normal industrial overloads.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode Excitation - Cyclic
Cathode Spot Starting - Ignitor
Number of Electrodes
  Main Anodes .............................................. 1
  Auxiliary Anodes ......................................... 1
  Ignitors .................................................. 2
  Control Grids ............................................. 1
Arc Drop at 200 Peak Amperes ................................ 20 Volts

Mechanical

Envelope Material - Stainless Steel
Net Weight, approximate .................................. 190 Pounds

Thermal

Type of Cooling - Water
  Inlet Water Temperature, minimum ..................... 30 C
  Outlet Water Temperature, maximum ................... 50 C
  Water Flow, minimum *
    At Continuous Rated Load ............................. 10 Gallons per Minute
    At No Load .......................................... 1 Gallons per Minute
Characteristics for Water Cooling at 10 Gallons per Minute
  Water Temperature Rise, maximum .................... 9 C
  Pressure Drop, maximum ............................... 2.5 Pounds per Square Inch
  Maximum Working Water Pressure ....................... 100 Pounds per Square Inch
MAXIMUM RATINGS AND TYPICAL OPERATION

Power Rectifier Service, Continuous Duty
Ratings are for Zero-Phase Control Angle

Maximum Peak Anode Voltage ............... 700 Volts

Maximum Anode Current
Peak ........................................ 2500 Amperes
Average
Continuous .................................. 670 Amperes
Two Hours, Averaged Over Any Two-Minute Interval .... 840 Amperes
One Minute, Averaged Over Any One-Minute Interval .... 1340 Amperes

Fault
Peak Forward Direction ...................... 20,000 Amperes
Peak Reverse Direction ..................... 40,000 Amperes
Maximum Duration of Fault Current .......... 0.15 Seconds

Frequency ................................... 25 - 60 Cycles per Second

Ignitor Characteristics
Maximum Inverse Voltage .................... 5 Volts
Recommended Pulse Length ................. 800 Microseconds
Minimum Pulse Length, average anode current greater than
  20 Amperes ................................ 150 Microseconds
Maximum Pulse Length ...................... 4,000 Microseconds

Minimum Maximum

Grid
Peak Forward Voltage ....................... 200  500 Volts
Peak Inverse Voltage ....................... 100  200 Volts
Peak Forward Current ...................... 0.4  5 Amperes
Peak Inverse Current ...................... 0.4  1 Amperes

Excitation Anode Characteristics
Recommended Peak Forward Voltage ........ 75 - 150 Volts
Maximum Peak Inverse Current ............. 0.1 Amperes
Recommended Forward Current, average .... 3 - 10 Amperes

* Water flow should be continued for one hour after removal of anode power.

APPLICATION NOTES

To prevent excessive condensation of mercury on the inside of the glass, heat should be externally applied to the anode glass-seal area.

Electronic Components Division

GENERAL ELECTRIC COMPANY

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