

IGNITRON

DESCRIPTION AND RATING

The GL-5788 is a permanently sealed water-cooled rectifier ignitron similar in construction and rating to the GL-5555/FG-238-B. Special features are reliable operation at higher water temperature and lower water pressure drop, than is possible with that tube, and distinctive (larger diameter) ignitor terminals. These features make possible the use of economical water-to-air heat exchangers at higher ambient temperatures, than are possible with the other tube, the operation of six tube cooling jackets in series on normal water supply line pressures, and assure the user against premature ignitor failures caused by connecting the auxiliary anode lead to an ignitor terminal. The tube is designed for operation in 300, 600 and 900 volt d-c industrial rectifier circuits. The continuous average anode current rating is 200 amperes per tube in rectifiers rated up to 400 volts d-c.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode Excitation - Cyclic	
Cathode-Spot Starting - Ignitor	
Number of Electrodes	
Main Anodes	1
Main Cathodes	1
Auxiliary Anodes	1
Ignitors	2
Arc Drop	
At 600 Amperes Peak	16.2 $\pm$ 0.5 Volts
Cathode Excitation Requirements	
Ignitor Voltage Required to Fire	450 Volts
Ignitor Current Required to Fire	45 Amperes
Excitation Arc Current Required, minimum	8 Amperes
Excitation Arc-Drop Voltage	9 $\pm$ 0.5 Volts
Excitation Arc-Open-Circuit Voltage, minimum	55 Volts AC

Mechanical

Envelope Material - Metal	
Net Weight, Approximate	25 pounds
Type of Cooling - Water	
Characteristics for Water Cooling	
Water Temperature Rise, maximum	4.5 C
Pressure Drop at 3 Gallons per Minute, maximum	3 Pounds per Square Inch

Thermal

Water Cooling

Outlet Water Temperature, maximum

Peak Inverse Anode Voltage = 900

60 Centigrade

Peak Inverse Anode Voltage = 2100

55 Centigrade

Inlet Water Temperature, minimum

6 C

Water Flow

At Continuous Rated Average Current,
minimum3 Gallons per
Minute

At No Load, minimum

1 Gallon per
Minute

MAXIMUM RATINGS

As Power Rectifier Tube*

Maximum Peak Anode Voltage

Inverse

900

2100 Volts

Forward

900

2100 Volts

Maximum Anode Current

Peak

1800

1200 Amperes

Average

Continuous

200

150 Amperes

2 Hours

300

225 Amperes

1 Minute

400

300 Amperes

Surge

12000

9000 Amperes

Maximum Duration of Surge Current

0.15

0.15 Second

Frequency Range

25 to 60 25 to 60 Cycles per
Second

* Ratings are for zero phase-control angle.

As AC Control Tube

Two Tubes in Inverse Parallel

Voltage

2400 RMS Volts

Maximum Demand

2400 Kilovolt-
Amperes

Average Current at Maximum Demand

135 Amperes

Maximum Average Current

207 Amperes

Demand at Maximum Average Current

1105 Kilovolt-
Amperes

Maximum Averaging Time at 2400 Volts RMS

1.66 Seconds

Maximum Surge Current

6000 Peak Amperes

Ignitor

Maximum Voltage

Positive

Anode Volts

Negative

5 Volts

Maximum Current

Peak

100 Amperes

Root Mean Square

15 Amperes

Average

2.0 Amperes

Maximum Averaging Time

10 Seconds

Starting Time at Required Voltage or Current

100 Microseconds

G E N E R A L E L E C T R I C C O M P A N Y

Auxiliary Anode	
Maximum Current	
Peak	30 Amperes
Average	9 Amperes
Maximum Averaging Time	10 Seconds
Root Mean Square	15 Amperes
Maximum Peak Forward Voltage	160 Volts
Maximum Peak Inverse Voltage	
Main Anode Conducting	25 Volts
Main Anode Not Conducting	160 Volts

January 17, 1955

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