IGNITRON

SPECIAL DESIGN FEATURES

1. Stainless-steel, seam-welded construction
2. Uniform water cooling
3. Strong, compact design
4. Easy to install
5. Copper terminals
6. Flexible anode lead
7. Mercury-pool cathode allows extremely high instantaneous currents to be passed through the tube without damage.

DESCRIPTION

The ability of this tube to carry very high peak currents for short periods makes it especially suited to welder-control service. It may also be used for conversion in low-power circuits.

Ease of installation, economical use of space, and reliability of operation are assured by design and construction features inherent in the steel-jacketed construction.

The FG-258-A is similar to the FG-235-A and the FG-271. All of these tubes can be used for a wide range of applications where welds are made infrequently or in rapid succession.

The current range required for the welding operation determines which tube to use. Another factor, of course, is the nature of the material to be welded. Low-resistance materials, such as aluminum alloys, require more current than such high-resistance metals as stainless steel.

The FG-258-A ignitron is equivalent to a 1200-ampere magnetic contactor.

TECHNICAL INFORMATION

These data are for reference only. For design information refer to specifications.

GENERAL CHARACTERISTICS

Peak voltage drop, approx	12	volts
Net weight, approx	20	pounds
Shipping weight, approx	41	pounds
Type of cooling		water
Maximum outlet water temperature	40	centigrade
Minimum flow	3	gallons per minute
Minimum inlet water temperature	10	centigrade
Pressure drop per tube at minimum flow	5.1	pounds per square inch
Temperature rise at minimum flow, approx (Average current 200 amperes per anode)	5	centigrade

MAXIMUM RATINGS

A-C Welder-Control Service—Frequencies from 25 to 60 Cycles—Ratings are for any Voltage from 250 to 600 Volts Rms* †

Maximum demand	2400	kva
Corresponding average anode current	192	amperes
Maximum average anode current	355	amperes
Corresponding demand	800	kva
Maximum time of averaging anode current*		
At 500 volts, rms	5.6	seconds
At 250 volts, rms	11	seconds
Maximum surge current, peak amperes	280	per cent of maximum rms demand current

Ignition Requirements

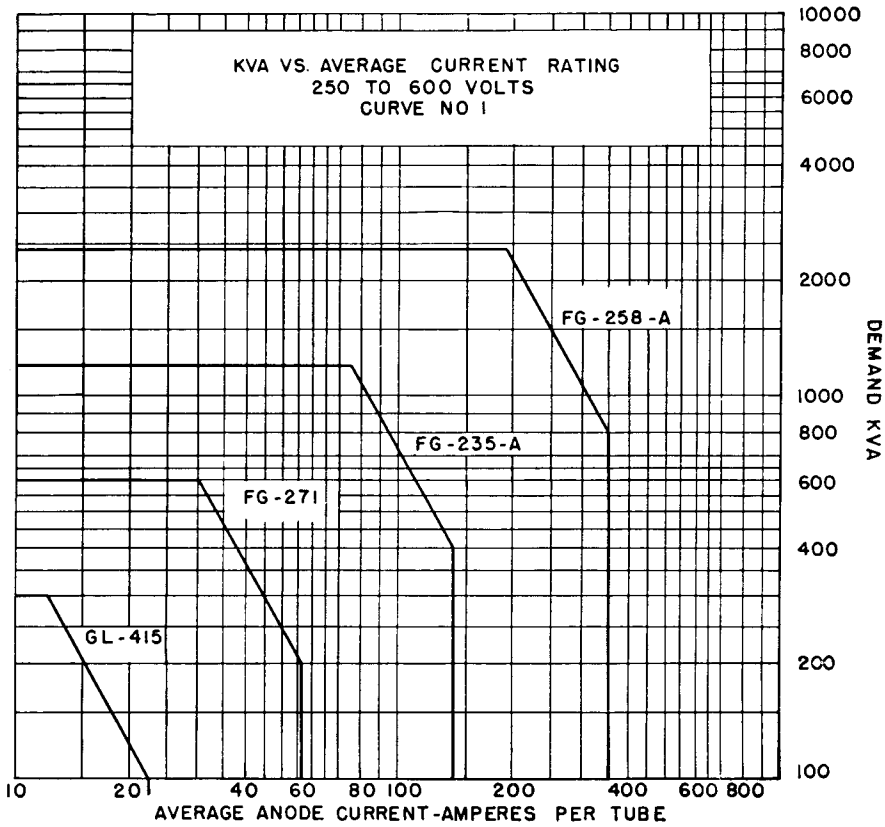
Ignitor voltage		
Maximum instantaneous allowed, ignitor positive	900	volts
Maximum instantaneous required, ignitor positive §	200	volts
Maximum instantaneous allowed, ignitor negative	5	volts
Ignitor current		
Maximum instantaneous allowed	100	amperes
Maximum instantaneous required §	30	amperes
Maximum average allowed	1	ampere
Ignitor ignition time, maximum §	100	microseconds
Ignitor current averaging time	5	seconds

* With the use of log-log paper, straight line interpolation between the two points tabulated may be used to determine other detailed ratings.

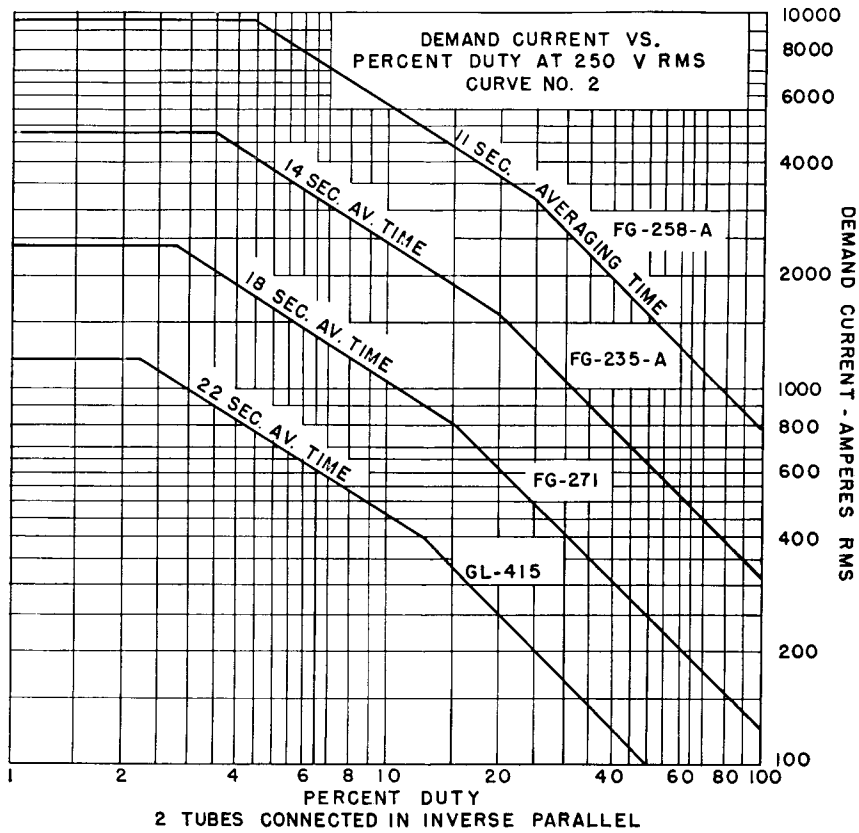
† Rms demand voltage, current, and kva are all on the basis of full-cycle conduction (no phase delay) regardless of whether or not phase control is used. For voltages below 250 volts, use the 250-volt rating.

§ Ignition will occur if either maximum required instantaneous positive potential is applied or maximum required instantaneous current flows for the rated maximum ignition time.

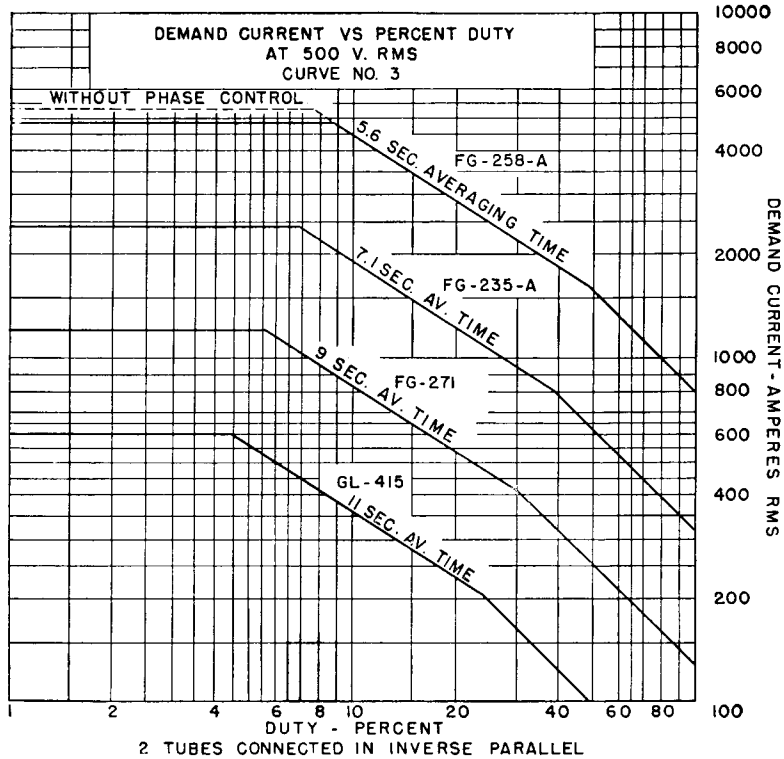
Note for Curves of Figures 1, 2, and 3.
In the case of 258-A, a special allowance up to 5300 amperes at voltages below 600 volts is made for panels which fire the ignitor synchronously and with a zero phase delay.



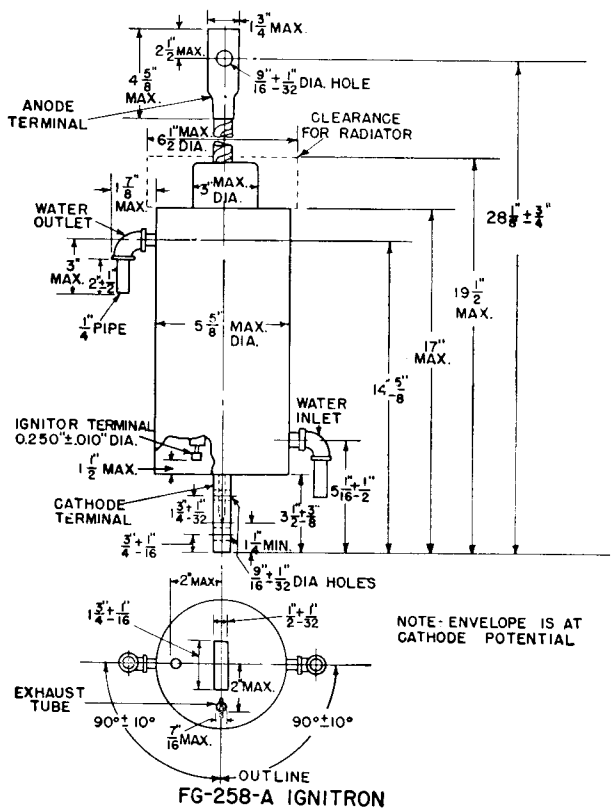
K-6966431 Fig. 1 7-1-44



K-6966432 Fig. 2 7-1-44



K-6966433 Fig. 3 8-25-44



FG-258-A IGNITRON

K-5340877 10-5-44

Electronics Department

GENERAL ELECTRIC

Schenectady, N. Y.