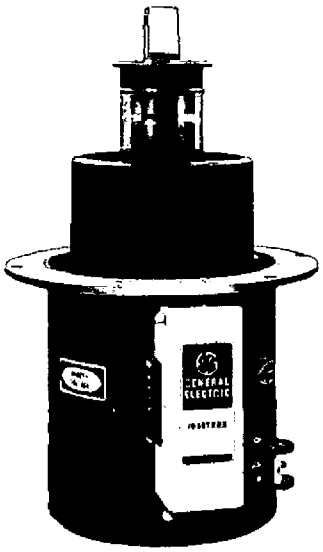


GL-8420

COAXIAL IGNITRON

INTEGRAL CONTROL THERMOSTAT FORCED-AIR COOLED

ELECTRONIC CONTACTOR SERVICE 1000 AMPERES

The GL-8420 is a forced-air-cooled ignitron for use in railroad locomotive service as an electronic contactor. In such application two tubes in an inverse-parallel connection control the a-c voltage input to a semiconductor rectifier.

Features include a coaxial construction in which current flows from anode to cathode, then up the tube wall to a coaxial cathode terminal. Coaxial current flow provides a magnetic shield to eliminate arc deflection caused by high peak currents. An integral thermostat provides protection against excessive temperature and loss of cooling air. An ignitor terminal block on the periphery of the tube facilitates connecting to the ignitor.

Electrical

Cathode Excitation—Cyclic		
Cathode Spot Starting—Ignitor		
Number of Electrodes		
Main Anodes	1	
Main Cathodes	1	
Ignitors	1	
Arc Drop, at 1100 Amperes Peak	19	Volts

Mechanical

Envelope Material—Steel		
Net Weight	130	Pounds
Mounting Position—Vertical, Anode Terminal Up		

Thermal

Type of Cooling—Forced Air		
Cooling Air Temperature		
Maximum	45	C
Minimum	10	C
Air Flow at Rated Load, minimum	600	Cubic Feet per Minute
Static Incoming Air Pressure at Minimum Flow	3.9	Inches—Water
Incoming Air Enters Beneath Tube—(See Outline Drawing)		

MAXIMUM RATINGS—AC CONTACTOR SERVICE
(Two Tubes in Inverse Parallel, Ratings per Tube)

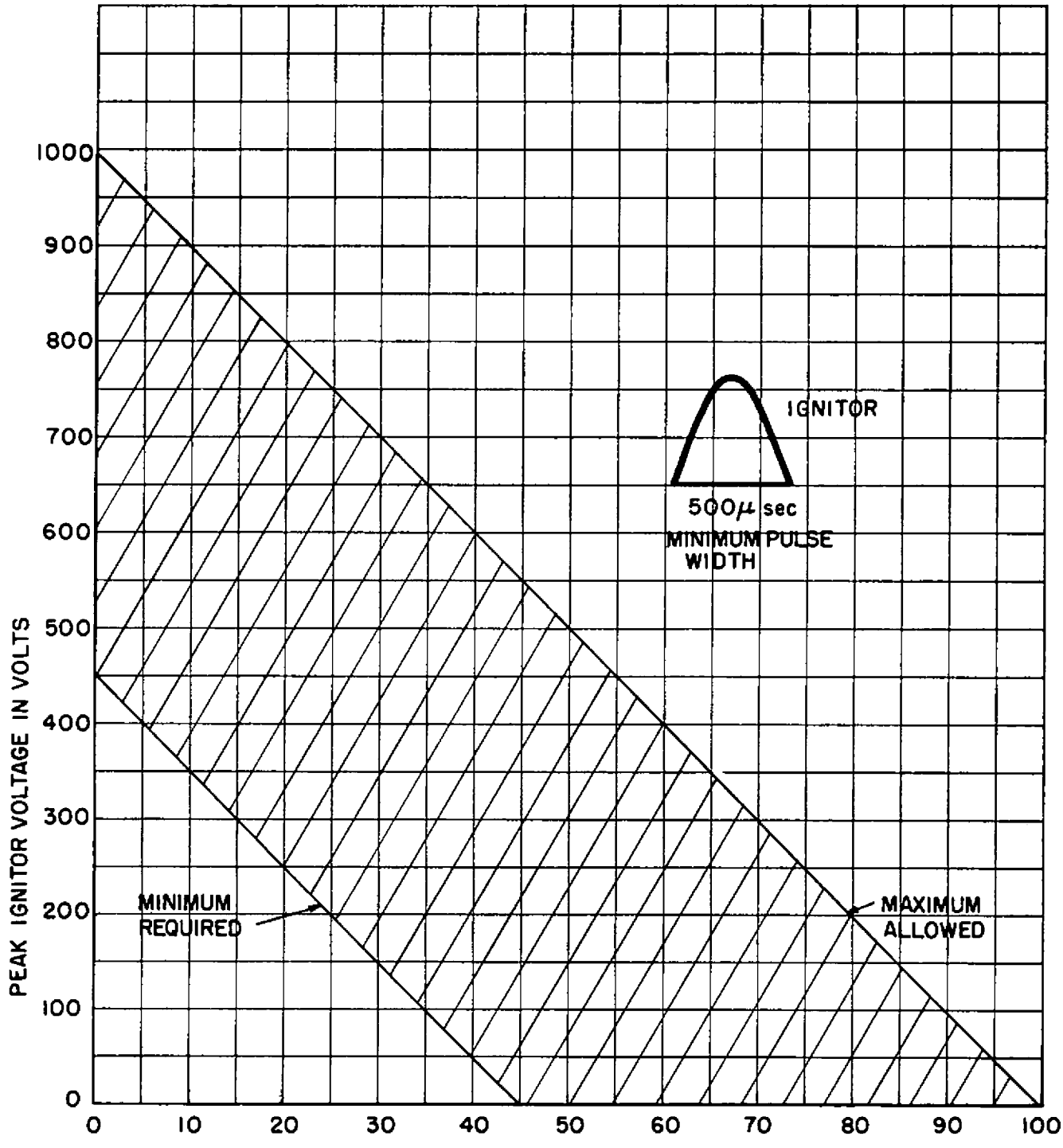
Peak Foward and Inverse Anode Voltage	1000	Volts
Average Anode Current		
5 Cycles	1000	Amperes
2 Minutes	130	Amperes
Frequency Range	25-60	Cycles per Second

Ignitor Requirements		
Maximum Voltage		
Positive—Anode Voltage		
Negative	5	Volts
Maximum Current		
Peak	100	Amperes
Root Mean Square	15	Amperes
Average	2	Amperes
Maximum Averaging Time	10	Seconds
Volt-Ampere Time Requirements—See Curve K-69087-72A982		
Temperature-Control-Switch Ratings		
Maximum Current, at 32 Volts DC	1	Ampere
Maximum Peak Potential Difference Between Tube Cylinder and Switch Current	1500	Volts

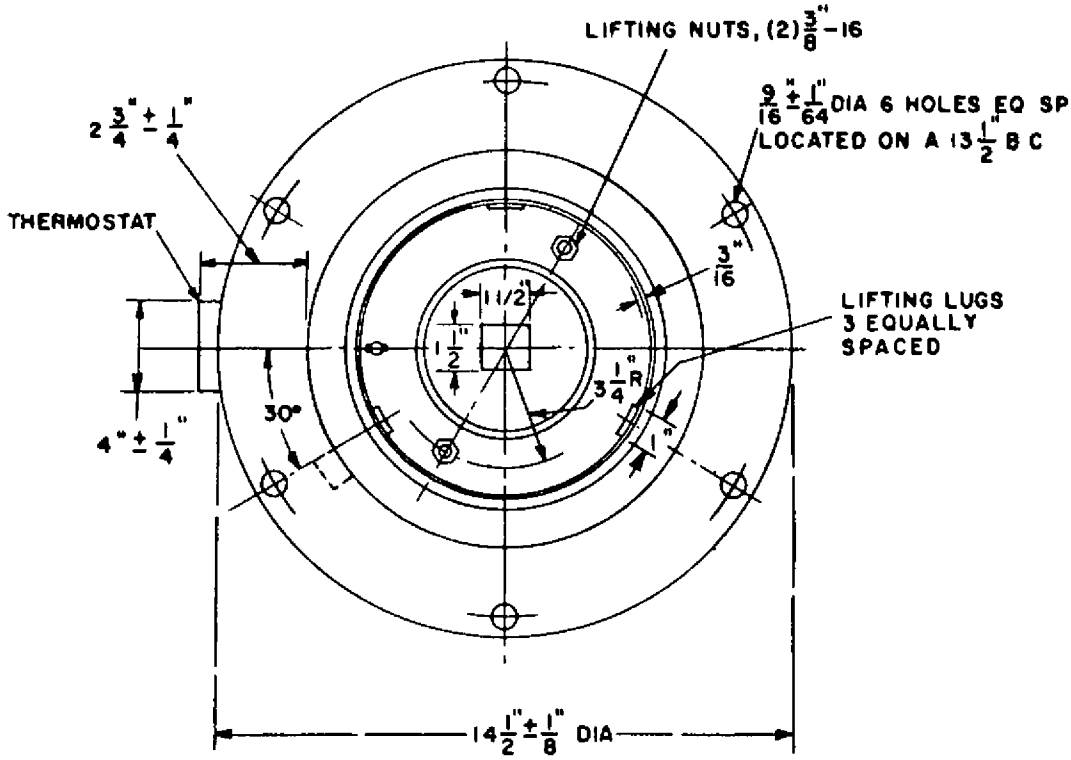
GENERAL ELECTRIC

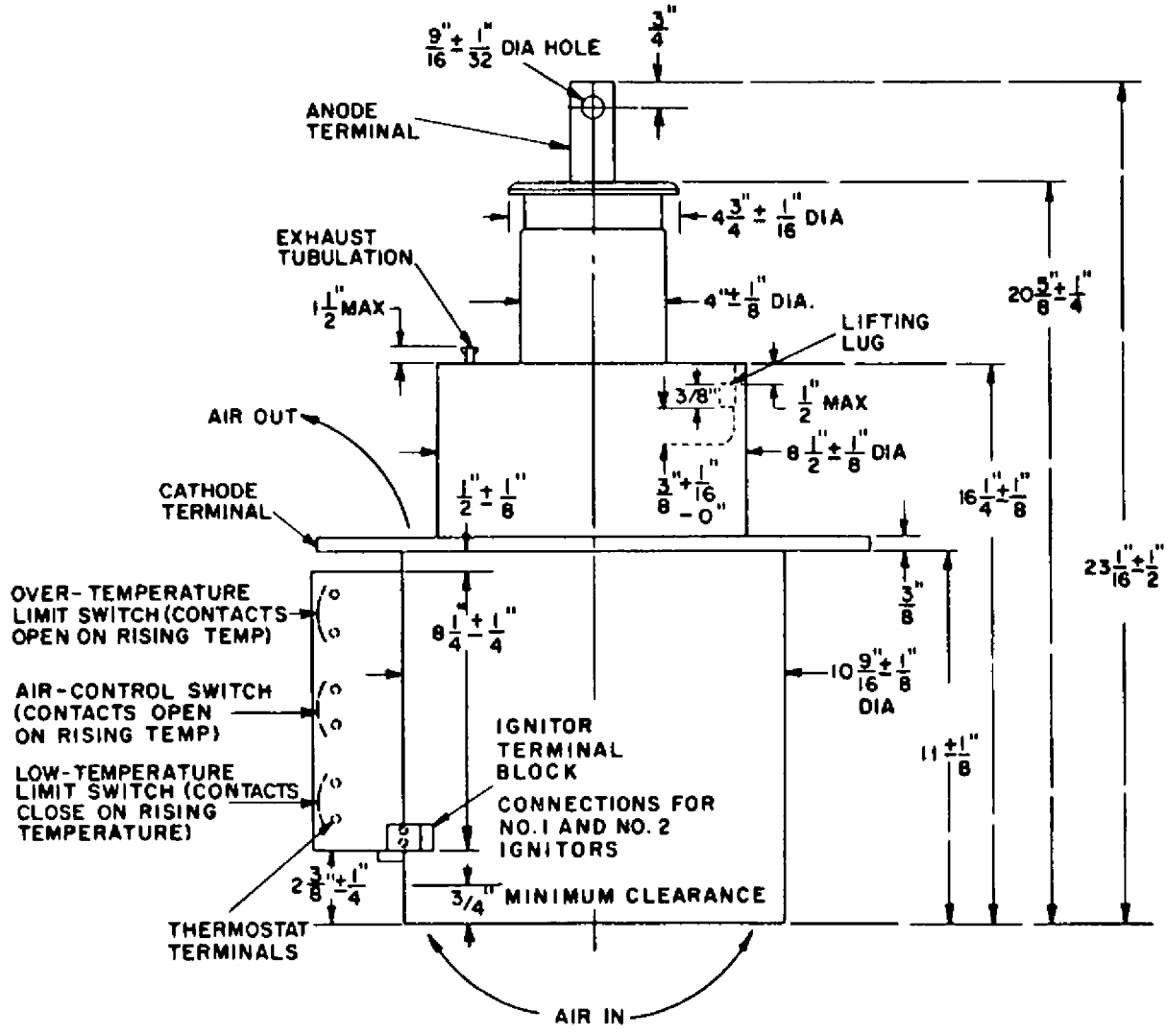
from JEDEC release #4173, March 4, 1963

IGNITOR VOLT-AMPERE REQUIREMENTS FOR SEPARATE EXCITATION



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


LIFTING NUTS, (2) 3/8"-16
9/16" ± 1/64" DIA 6 HOLES EQ SP
LOCATED ON A 13 1/2" B C
2 3/4" ± 1/4"
THERMOSTAT
3/16"
1 1/2"
1 1/2"
LIFTING LUGS
3 EQUALLY
SPACED
3 1/4" R
30°
4" ± 1/4"
1"
14 1/2" ± 1/8" DIA


9/16" ± 1/32" DIA HOLE
3/4"
ANODE
TERMINAL
4 3/4" ± 1/16" DIA
EXHAUST
TUBULATION
1 1/2" MAX
4" ± 1/8" DIA.
20 5/8" ± 1/4"
LIFTING
LUG
3/8"
1/2" MAX
AIR OUT
8 1/2" ± 1/8" DIA
1/2" ± 1/8"
3/8" + 1/16" - 0"
16 1/4" ± 1/8"
CATHODE
TERMINAL
23 1/16" ± 1/2"
3/8"
OVER-TEMPERATURE
LIMIT SWITCH (CONTACTS
OPEN ON RISING TEMP)
8 1/4" ± 1/4"
10 9/16" ± 1/8"
DIA
AIR-CONTROL SWITCH
(CONTACTS OPEN
ON RISING TEMP)
IGNITOR
TERMINAL
BLOCK
11 ± 1/8"
LOW-TEMPERATURE
LIMIT SWITCH (CONTACTS
CLOSE ON RISING
TEMPERATURE)
CONNECTIONS FOR
NO. 1 AND NO. 2
IGNITORS
2 3/8" ± 1/4"
3/4" MINIMUM CLEARANCE
THERMOSTAT
TERMINALS
AIR IN