IGNITRON TUBE

NL-1005
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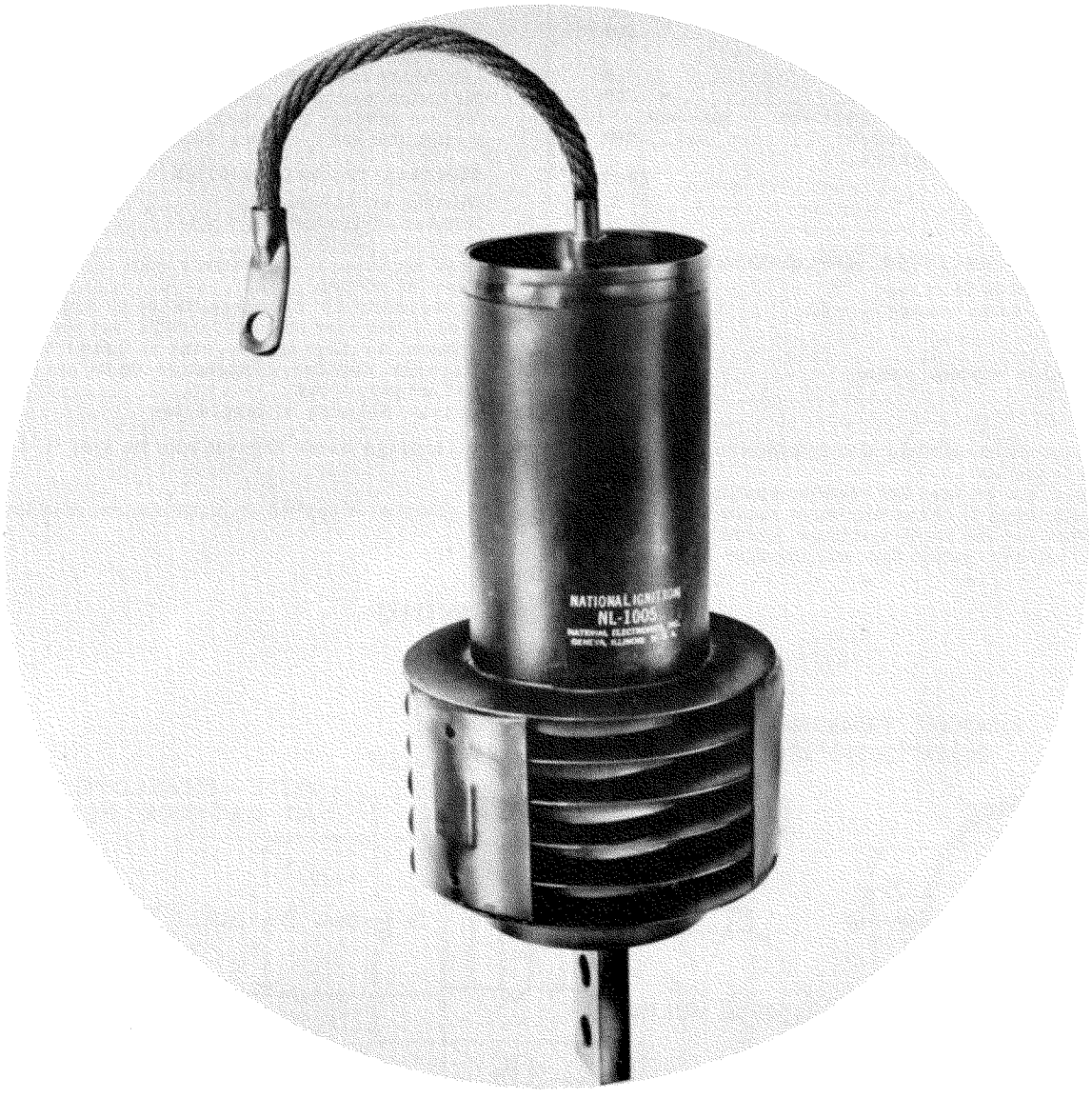
56 Amperes dc



NATIONAL IGNITRON NL-1005 is a sturdy, metal, air-cooled mercury pool tube designed especially for welder control and similar AC control applications. It is also useful in some rectifier applications. NL-1005 is designed for forced air cooling but may be used with free air cooling at reduced ratings.

NATIONAL ELECTRONICS, INC.
GENEVA, ILLINOIS, U. S. A.

NL-1005 IGNITRON TUBE
TECHNICAL INFORMATION

AC CONTROL APPLICATIONS — Ratings are based on full-cycle conduction (no phase delay) regardless of whether or not phase control is used, on frequencies from 25 to 60 cycles, and any voltage between 250 and 600 volts rms.

[1]Maximum demand — kva	600
[1]Corresponding maximum average anode current per tube — amps dc	30.2
[1]Maximum average anode current per tube—amps dc	56
[1]Corresponding maximum demand — kva	200
[1]Maximum averaging time — seconds	
At 500 volts rms	9
At 250 volts rms.	18
Maximum surge current — peak amps — per cent of max. rms. demand current	250
[4]Maximum cylinder temperature	
At 600 volts rms	80°C
At 500 volts rms	85°C
At 250 volts rms	90°C

[2]INTERMITTENT RECTIFIER APPLICATIONS — Frequencies from 25 to 60 cycles.

Maximum peak anode voltage — volts	
Inverse	500
Forward	500
Maximum anode current, amps	
Instantaneous	700
Average, per tube	40
Averaging time — seconds	3
Surge, peak amps, averaging time — 0.15 seconds	6000
Maximum cylinder temperature at 500 volts peak	75°C

IGNITION REQUIREMENTS (same for both applications)

Ignitor Voltage

Maximum instantaneous allowed, ignitor positive, volts	900
[3]Maximum instantaneous required, ignitor positive, volts	200
Maximum instantaneous allowed, ignitor negative, volts	5

Ignitor Current

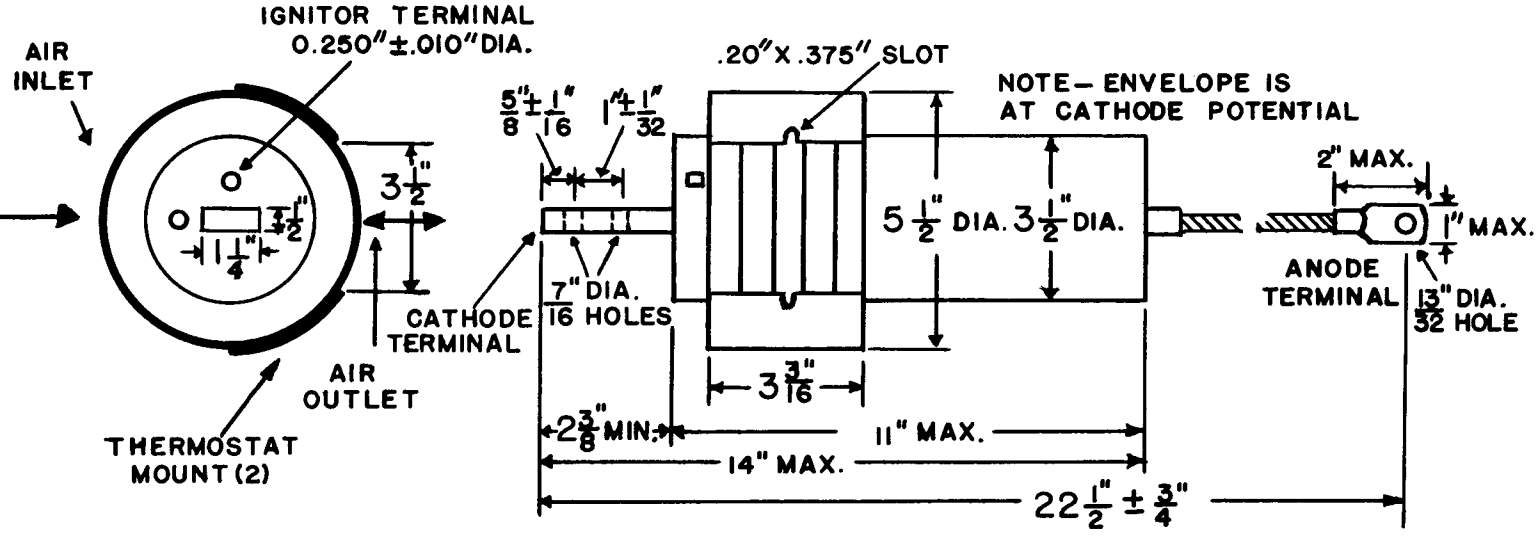
Maximum instantaneous allowed — amperes	100
[3]Maximum instantaneous required — amperes	30
Maximum average allowed — amperes	1
[3]Ignitor ignition time, maximum — microseconds	100
Ignitor current averaging time — seconds	5

GENERAL CHARACTERISTICS

Number of Anodes	1
Number of Ignitors	1
Mounting position	Vertical
Peak arc drop — approximate volts	12
Type of cooling	forced air
Approximate air flow required at 50 amperes dc for 45°C rise over ambient — cubic feet per minute	140
Reduced air flow may be used at lighter load as long as Maximum Cylinder Temperature limits are not exceeded.	
Net weight — lbs.	7
Approx. Shipping Weight — lbs.	15

[1]Using log-log paper, straight line interpolation of Demand Current vs. Average Anode Current may be used to determine intermediate ratings.
[2]Curves must not be used for rectifier applications.
[3]Ignition will occur if either maximum required instantaneous positive potential is applied or maximum required instantaneous current flows for the rated maximum ignitor ignition time.
[4]Measured between center fins and opposite blower.

OUTLINE DRAWING



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