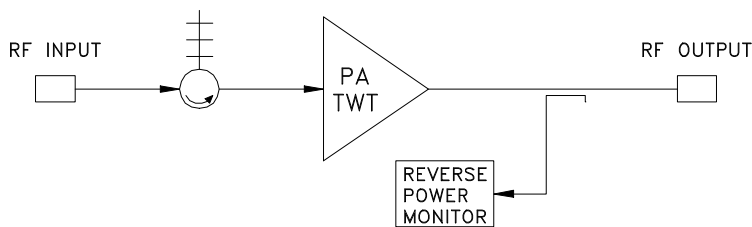


# Model 174 1kW TWT Amplifier

4.0%  
DUTY



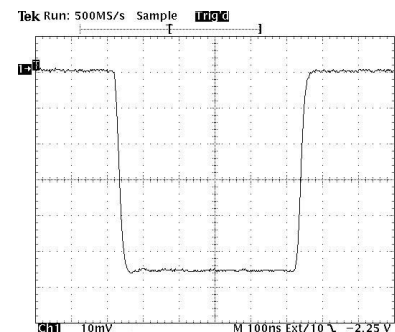
The Model 174 TWT Amplifier has been designed specifically to operate pulsed traveling wave tubes in the 1 to 2 kW peak power range at frequencies up to 18 GHz. Particular emphasis has been placed on the generation of the output RF pulse shape without the use of RF switches. Pulse width control is with an external pulse.

Internal power supplies are DC-DC converter designs with fast loop response times so that output level variations are minimal for any PRF including a non-periodic or burst type PRF. The modular power supplies and grid pulse generator have very low ripple, with attendant low phase noise in the TWT Amplifier.

The modular design of the Model 174 provides convenient accessibility to all elements in the TWT amplifier. Plug-in PC boards are accessible through the front panel. The PC card cover contains a legend for PC card located test points and controls. High voltage modules are encapsulated, plug-in assemblies. There is no exposed high voltage. Most modules are interchangeable between all units regardless of frequency.

## FEATURES:

- Frequency 1 to 18 GHz  
Octave / Multioctave
- Low Spurious Outputs
- Phase and Amplitude Stability
- Complete TWT Protection
  - Pulse Input Protection
  - Helix Overcurrent
  - Cathode Over/Undervoltage
  - Filament Low Voltage
  - Overtemperature
  - Input Energy Limit
  - Reverse Power Monitor
- Custom Requirements
- Solid State Except for the TWT
- Front Panel Voltage Adjustments
- Front Panel Fault Isolation
- Modular Construction
- DC TWT Filaments
- Four Line Display
  - Operating Mode
  - Cathode Voltage
  - Helix Current
  - Filament and Operate Time
- Front Panel Controls
  - Power On / Off
  - Operate
  - Standby
  - Fault Reset
  - Local / Remote



Detected RF Output

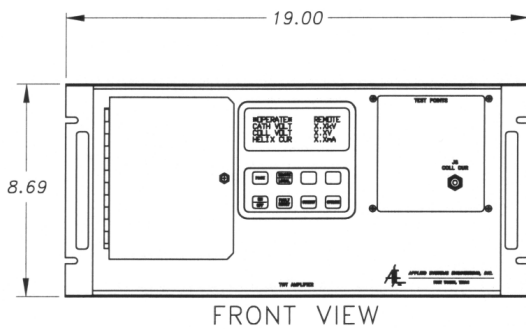


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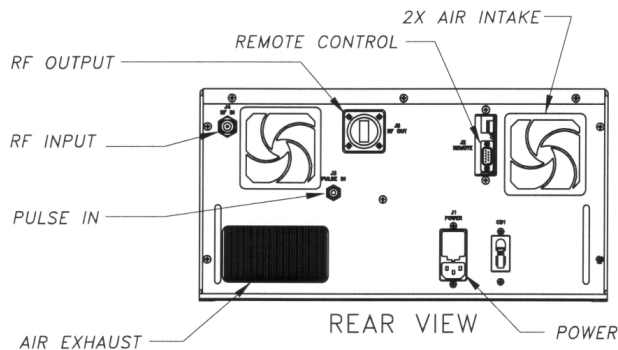
FORT WORTH, TEXAS

## Model 174 TWT Amplifier SPECIFICATIONS

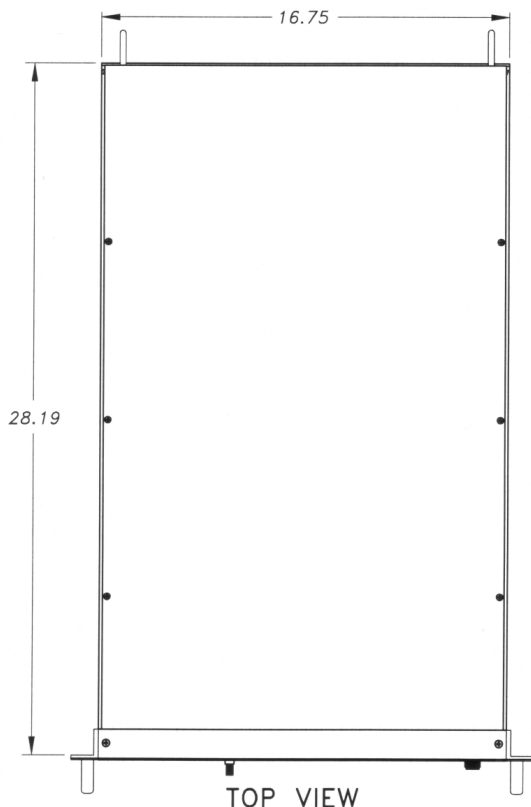
Duty Cycle	4.0%, Maximum
Pulse Width Range	0.05 to 15 us
PRF Range	0 to 400 kHz
RF Rise / Fall Time	15 ns, Maximum
RF Pulse Droop	0.5 dB, Maximum
Delay, Input to RF	200 ns, Maximum
Phase Noise	$< \pm 1^\circ$ pk to pk
Amplitude Variation	0.1 dB, Maximum
Spurious Outputs	-50 dBc, Maximum
Input Pulse	5 Volts into 50 ohms
Noise Figure	35 dB, Nominal
RF Connectors	Precision Type N or Waveguide
Primary Power	120/220/240 VAC $\pm 10\%$ , 50/60 Hz
Operating Temperature	0 to 50°C
Weight	90 lbs, Nominal
Dimensions	8.75x19x28.5 (in.)



FRONT VIEW



REAR VIEW



TOP VIEW

## Standard Equipment

- Input Isolator
- Filament / Operate Time
- IEEE-488 Remote Interface
- Reverse Power Monitor

## Options

- Driver Amplifier
- Wider Pulse Widths
- Extended Frequency Coverage
- Higher Peak Power
- RF Sample Ports
- Detected RF Output
- RS-232/422 Remote Interface
- Other Primary Power
- Outdoor Enclosure
- RF Connectors on Front Panel
- Harmonic Filters



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mdl174\_3.wpd  
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