

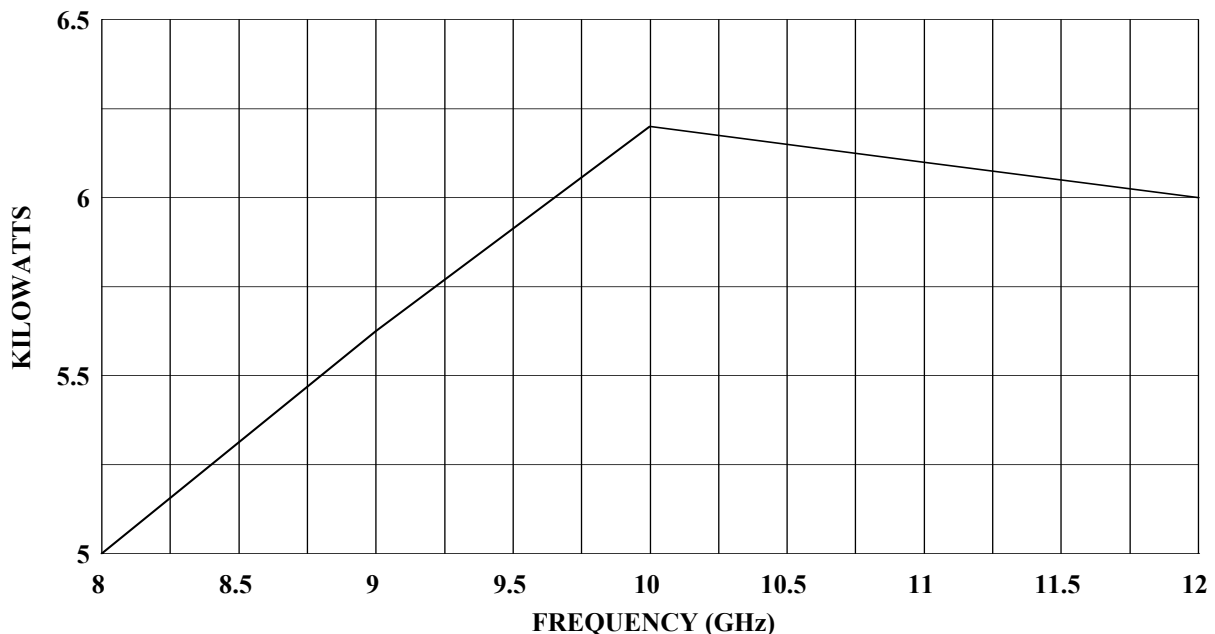
The Model 4000TP8G12 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. A reliable TWT provides a conservative 4200 watts minimum peak RF pulse power at the amplifier output connector. Stated power specifications are at the fundamental frequency.

The amplifier's front panel digital display shows forward and reflected average power output or forward and reflected peak power, plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess average or peak reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0dBm input, TTL Gating, VSWR protection, gain control, RF output sample port, auto sleep, plus monitoring of TWT helix current, cathode voltage, collector voltage, heater current, heater voltage, baseplate temperature and cabinet temperature. Modular design of the power supply and RF components allow for easy access and repair. Use of switching mode power supplies results in significant weight reduction.

Housed in a stylish contemporary cabinet, the amplifier provides readily available pulsed RF power for a variety of applications in Test and Measurement, (including EMC RF pulse susceptibility testing), Industrial and University Research and Development, and Service applications. AR also offers a broad range of amplifiers for CW (Continuous Wave) applications.

See Model Configurations for alternative prime power, packaging, and special features.

4000TP8G12 Typical Peak Pulse Power Output



SPECIFICATIONS, MODEL 4000TP8G12

POWER (Fundamental), PEAK PULSE, @ OUTPUT

Nominal	5500 watts
Minimum.....	4.2 kW

FLATNESS.....±10 dB maximum

FREQUENCY RESPONSE.....8-12 GHz

INPUT FOR RATED OUTPUT.....1.0 milliwatt maximum

GAIN (at maximum setting).....66 dB minimum

GAIN ADJUSTMENT (continuous range).....35 dB minimum

INPUT IMPEDANCE.....50 ohms, VSWR 2.5:1 maximum

OUTPUT IMPEDANCE.....50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE.....Output pulse width foldback protection at peak reflected power exceeding 2000 watts. Will operate without damage or oscillation with any magnitude and phase of source and load impedance. May oscillate with unshielded open due to coupling to input. Should not be tested with connector off.

PULSE CAPABILITY

Pulse Width.....0.07 – 100 microseconds.

Pulse Rate (PRF).....100 kHz maximum

Duty Cycle.....4% maximum.

RF Rise and Fall.....30 ns max (10% to 90%).

Delay.....300 ns maximum from pulse input to RF 90%

Pulse Width Distortion.....±30 ns maximum (50% points of output pulse width compared to 50% points of input pulse width)

Pulse Off Isolation.....80 dB minimum, 90 dB typical

Pulse Input.....TTL level, 50 ohm nominal termination

NOISE POWER DENSITY (pulse on).....Minus 57 dBm/Hz (maximum); Minus 59 dBm/Hz (typical)

(pulse off).....Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION.....Minus 10 dBc maximum

PRIMARY POWER.....See Model Configurations

CONNECTORS

RF input.....Type N female on rear panel

RF output.....Type WR90 waveguide flange on rear panel

RF output forward sample port.....Type N female on rear panel

Pulse input.....Type BNC female on rear panel

GPIB.....IEEE-488 female on rear panel

Interlock.....DB-15 female on rear panel

COOLING.....Forced air (self contained fans), air entry and exit in rear.

SIZE AND WEIGHT.....See Model Configurations

Model Configurations and Features - Model 4000TP8G12

- E** Must select one enclosure type from the following [E1 or E2 or E2S]:
- E1** with removable outer enclosure, size 19.8 x 17.5 x 27 in., 51 x 44.5 x 69 cm, weight 165 lbs, 7, kg.
- E2** without outer enclosure, for rack mounting, size 19 x 15.75 x 27 in, 48.3 x 40 x 69 cm. weight of E1 less 40 lbs, 18 kg.
- E2S** without outer enclosure, for rack mounting with slides and front pull handles installed, size 19 x 15.75 x 27 in, 48.3 x 40 x 69 cm, weight of E2 plus 5 lbs, 2kg.
- P** Must select one primary power from the following [P1 or P2]
- P1** 208 VAC \pm 10% three phase 50/60 Hz 3.0 KVA maximum
- P2** 190-260 VAC single phase 50/60 Hz 3.0 KVA maximum
- S** May select a special feature (extra cost) from the following [S1R]:
- S1R** Reflected power sample port, type N female connector on rear panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, evenly spaced over specified frequency response.

Model	Features		
	E	P	S
4000TP8G12	E1	P1	-
M1	E2	P1	-
M2	E2S	P1	-
M3	E1	P2	-
M4	E2	P2	-
M5	E2S	P2	-
M6	E1	P1	S1R
M7	E2	P1	S1R
M8	E2S	P1	S1R
M9	E1	P2	S1R
M10	E2	P2	S1R
M11	E2S	P2	S1R