



**Model 3000TP12G18
M1 through M8
3000 Watt Pulse Amplifier
12GHz–18GHz**

The Model 3000TP12G18 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 3000 watts minimum peak RF pulse power at the amplifier output connector. Stated power specifications are at the fundamental frequency.

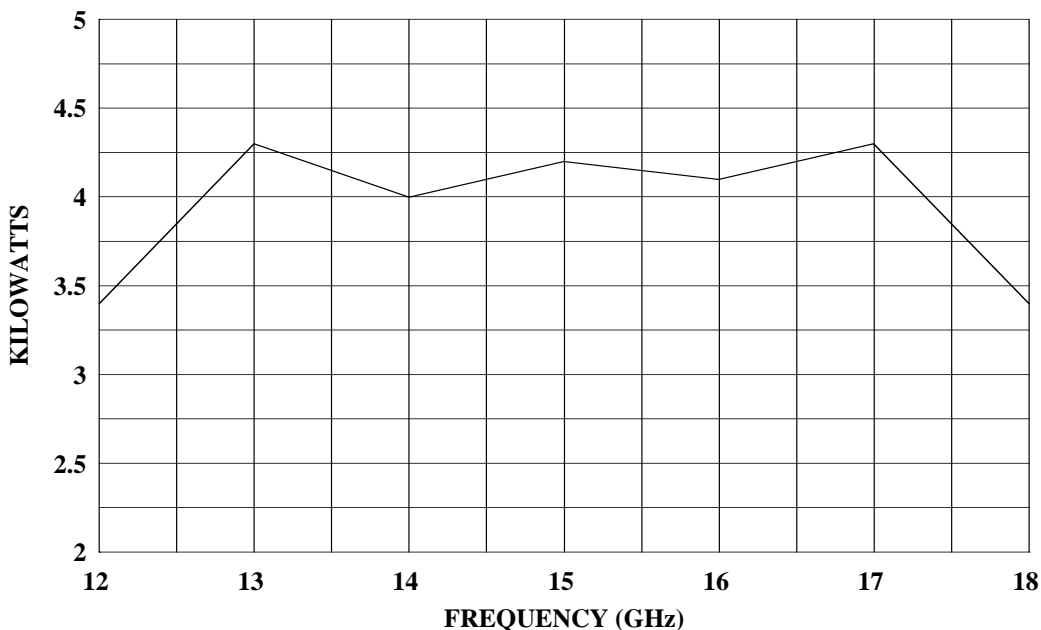
The amplifier's front panel digital display shows forward and reflected average power output or forward and reflected peak power, plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess average 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.

The export classification for this amplifier is ITAR. The export of this equipment is governed by the U.S. International Traffic in Arms Regulations (ITAR). This equipment and related technical data must not be transferred to a foreign person/entity without proper authorization of the U.S. Government. Violations may result in administrative, civil or criminal penalties.

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

Model 3000TP12G18 Typical Peak Pulse Power Output



SPECIFICATIONS, MODEL 3000TP12G18

POWER (Fundamental), Peak Pulse, @ Output

Nominal	3800 watts
Minimum	3000 watts

FLATNESS..... ±10 dB maximum

FREQUENCY RESPONSE 12–18 GHz

INPUT FOR RATED OUTPUT 1.0 milliwatt maximum

GAIN (at maximum setting) 65 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 1000 watts. Will operate without damage 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. See S2M special option, if applicable.

PULSE CAPABILITY

Pulse Width 0.07–50 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 55 dBm/Hz (maximum); Minus 65 dBm/Hz (typical)

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

HARMONIC DISTORTION Minus 8 dBc maximum

PRIMARY POWER See Model Configurations

CONNECTORS

RF input Type N female on rear panel

RF output Type WR62 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 50.3 x 26 x 69cm (19.8 x 10 x 27in)

WEIGHT 52 kg (115 lbs)

Model Configurations and Features - Model 3000TP12G18

- E Package Alternatives.** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:
- E1C Cabinet:** Without outer enclosure for rack mounting, size (W x H x D) 49 x 22 (5U) x 74 cm, 19 x 8.75 (5U) x 29 in., Subtract approximately 11 kg, 25 lbs, for removal of outer enclosure.
- E2S Slides:** slides installed, add approximately 2 kg, 5 lbs.
- E3H Handles:** Front pull handles installed.
- P Primary Power:** Must select one primary power from the following [P1 or P2]
- P1 208 VAC ± 10% 3-phase, 50/60 Hz, 2.0 KVA maximum
- P2 190-260 VAC single phase, 50/60 Hz, 2.0 KVA maximum
- S Special Features:** May select a special feature (extra cost) from the following [S1R or S2M]:
- 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.
- S2M Special Mismatch Tolerance Operation:** Amplifier will permit up to 1.9kW reflected power at maximum 8μs pulse width and .8% duty, without VSWR trip or fold-back. Exceeding 1.9kW reflected power will cause the unit to truncate pulse within 2μs. For pulses beyond 8μs, exceeding 1kW will cause the unit to truncate the pulse. If exceeding .8% duty with reflected power exceeding 1kW, the amplifier will truncate the pulse within 2μs. The amplifier will continue to truncate pulses until reflected power dissipates from outside source. Operation with truncated pulses for >250mS will result in latched "Truncated Pulse Fold Back" displayed on screen and over the remote interface, including an audible alarm. Operation with truncated pulses for 5 to 10 seconds will cause "Over Reverse" fault and a shutdown of high voltage and the amplifier.

Model Number	Features		
	E	P	S
3000TP12G18	Base model	P2	–
M1	E1C	P2	–
M2	E3H	P2	–
M3	E1C & E3H	P2	–
M4	E1C & E2S	P2	–
M5	E1C & E2S & E3H	P2	–
M6	–	P2	S1R
M7	–	P1	S2M
M8	–	P1	–

Model number example: Model 3000TP12G18M2 would have option E3H front pull handles installed.