

3000TP12G18

- Pulse Amplifier
- M1–M8
- 3000 Watts
- 12GHz–18GHz

Features

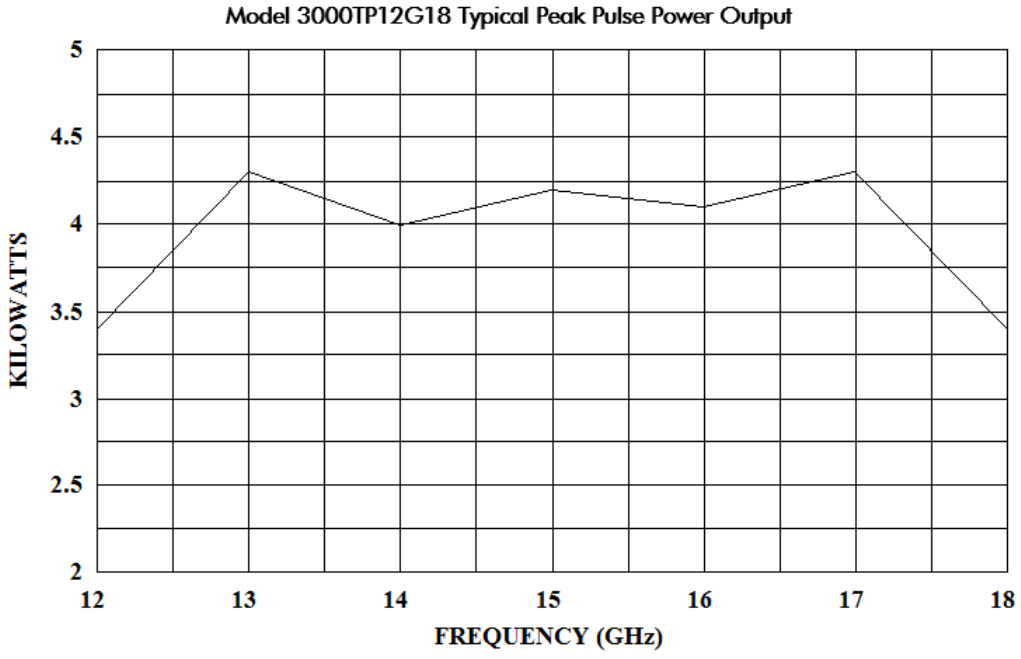
The Model 3000TP12G18 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. A reliable TWT provides a conservative 3000 watts minimum peak 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 equipment is 3A999.d. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

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



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Specifications

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.

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

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

CONNECTORS:

RF input:	Type N female, rear panel
RF output:	Type WR62 waveguide flange, rear panel
RF output forward sample port :	Type N female, rear panel
Pulse input:	Type BNC female, rear panel
GPIB:	IEEE-488 female, rear panel
Interlock:	DB-15 female, rear panel

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

SIZE: 50.3 x 26 x 81 cm (19.8 x 10 x 31.9 in)

WEIGHT: 52 kg (115 lbs)

EXPORT CLASSIFICATION: 3A999.d

Model Configurations

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 68 cm, 19 x 8.75 (5U) x 26.8 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.

	Features		
Model Number	**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.