

# AG 1012

## AMPLIFIER/GENERATOR



**Up to 1,000 Watts RF Power From 20 kHz to 6 MHz For Industrial, Laboratory And Medical Application.**

### FEATURING:

- 20 kHz to 6 MHz up to 1,000 W
- Output of 750 Watts  $h3 \leq -15$  dBc
- Digital Meter, measures forward and reflected power
- Front Panel Control of Amplifier and Generator functions
- Data acquisition: Status Monitoring & Power Measurement at Analog Port
- RS232 communication: Full Control Of Amplifier & Generator Functions
- AGC or Power Leveling: Gain Control to better than  $\pm 0.5$  dB
- Pulse and Sweep of RF internal signal generator

Amplifier Model AG 1012 is a robust source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, laboratory and general industrial applications.

Featuring leading edge solid state design for all RF amplifier stages and a built-in DDS signal source, it provides everything for a complete and reliable, controlled RF power delivery system. It reflects the T&C ongoing commitment to provide RF power products of the highest quality, incorporating the current requirements for complete remote control and data acquisition.

### OPERATION

The AG 1012 produces 1,000 Watts of linear power over a frequency range from lower than 20 kHz to higher than 6 MHz, with low harmonic and intermodulation distortion. It operates over the entire frequency range without band switching or other adjustments. Extended range to over 3 MHz is possible with reduced output power. Gain is rated at 60 dB with a typical gain flatness of  $\pm 1.5$  dB.

The Front Panel offers a LCD display of Forward, Reflected and Load Power readings, RF Status, MGC/AGC setups and operating frequency in Generator Mode.

Power meters are calibrated into a 50 Ohm Load and are accurate when unit operates into matched load. Outside of matched condition, the model

AG 1012's power measurement system provides an accurate reading of VSWR. When used as amplifier, the AG 1012 is compatible with most signal and function generators, computer synthesizer cards and accurately reproduces all waveforms within its output and bandwidth limits.

The Forced-air cooling system and the internal power supply are designed to permit operation over a wide range of temperature and global AC line conditions.

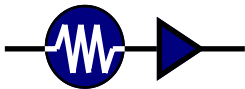
The AG 1012 is built to withstand a +13 dBm (2.8Vp-p) Input signal. The unit amplifies the inputs of AM, FM, SSB, pulse and other complex modulations with  $< -15$  dBc (h3) harmonic distortion and output power stability.

### OUTPUT PROTECTION

AG 1012 is protected by its internal control system for 1,000 Watts of total Forward Power and 160 Watts of Reflected Power. This will protect the amplifier output stage from accidental overdrive at the input and an extreme mismatch at the Output.

### GENERAL

T&C's products are designed to be reliable, compact and light in weight. The use of conservatively rated components ensures high reliability and eliminates the need for periodic calibration.



# AG 1012 Specifications

## Class Of Operation

Class B to 1000 Watts

## Frequency Of Operation

20 kHz to 6 MHz

## RF Power Output

600W from 0.02 MHz to 6 MHz of continues output into any load.  
Up to 1000W max from 0.4 MHz to 5 MHz, 50 Ohm load only, 20C, Pulsing and low duty cycle only!

## Gain

60 dB @ 200W / 0.5 MHz  
±1.5 dB 20 kHz to 6 MHz (200W Out)

## RF Input Drive

Typical range -20 dBm to 0 dBm, +5 dBm max

## RF Input Drive for AGC

Recommended -3 dBm to 0 dBm for ±0.3 dB gain flatness

## Input Drive Source

Signal or function generator, analog computer output capable of up to 1 V<sub>p-p</sub> @ 50 Ohm (+5 dBm)

## Internal RF Source

DDS oscillator: 20 kHz to 6 MHz, 1kHz resolution

## Input and Output Impedance

50 Ohm

## Input / Output VSWR

2:1 max Input  
3:1 max Output

## Output VSWR Protection

160 W max reflected power limit

## Harmonic Level @ 750W

Better than -15 dBc for 3rd harmonic, any other < -20 dBc

## Spurious Output

-26 dBm equivalent noise level generated by internal circuits

## RF Output Settings & Control

- Front Panel EDITOR and function switches for manual control,

## RF Output ... continued

- RS232 port for GUI or other computer communication. Rear Panel.  
- SubD 25 Analog and Digital I/O . Port power scale 1V=100W. Rear Panel

## RF Power Meter accuracy

± 3% typical

## Output Blanking (Pulsing)

For pulsed applications, T&C amplifiers and generators offer blanking of the output signal for minimum noise RF spectrum. Less than 1µs Rise/Fall time

## BURST:

### Internal Settings

Pulse range: 1 to 500 usec  
Period: 1 to 50 milliseconds  
User settings via GUI and RS232

### External Settings

DC to > 200 kHz. User defined BURST scheme via SubD-25. See analog port description for more details.

## SWEEP operation

0.02 to 6 MHz. Min time 10 ms, max 10s. Settings and activation from GUI only.

## RF Connectors

INPUT BNC Female  
OUTPUT N Female  
Rear Panel

## AC Power Source

200 - 240 VAC, +/- 10%, 47 - 63 Hz

## AC Power Connection

Non-detachable power cord anchored with compression bushing, followed by RFI filter. Back Panel

## AC Circuit Protection

20 A, double pole switch/circuit breaker on the Front Panel.  
Internally fused on the main DC Power Supplies, 15A.

## AC Input Current (RMS)

RF Out nominal 600W:

I ≤ 8A @ 220V

RF Out max 1000W:

I ≤ 13A @ 220V

## Cooling

Forced air, temperature controlled, heatsink temperature monitored via RS232 GUI interface.

## Acoustic level:

45dBa @ Max Fan Speed @ temp.

## Case

Designed to meet EMI and RFI shielding requirements AL chassis, yellow conductive finish.  
Front Panel: T&C off-white.  
Cover: T&C black.

## Dimensions

H178mm x W363 mm x L388mm  
( 7" x 14¼" x 15¼" )

## Weight

25 kg (54 lbs)

## Mounting

Table top, stand alone unit.  
Optional: Rack Mount Kit.

## Environmental conditions

Temp.: 10° to 35° C ambient

Humidity: 80%

Equipment intended for ISM applications in laboratory and light industrial environment.

