



T&C

Power Conversion

AG 1006 AMPLIFIER/GENERATOR



T&C POWER CONVERSION

Up to 300 Watts of RF Power From 20 kHz to 14 MHz For Industrial, Laboratory And Medical Application.

FEATURING:

- 20 kHz to 4 MHz up to greater than 300 W
- Output of 250 Watts $h_{3\leq} -12$ dBc
- Digital Meter, measures forward, reflected and load 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 ± 0.5 dB
- Pulse and Sweep of RF internal signal generator



Power Supply
Front Panel View

Amplifier/Generator AG 1006 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 features.

OPERATION

The AG 1006 produces up to 300 Watts of RF power over a frequency range from lower than 20 kHz to higher than 4 MHz. It operates over the entire frequency range without band switching or other adjustments. Extended range to over 10 MHz is possible with reduced output power. Gain is rated at 55 dB with a typical gain flatness of ± 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 1006's power measurement system provides an accurate reading of VSWR.

When used as amplifier, the AG 1006 is compatible with most signal and function generators, computer synthesizer cards 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 1006 is built to withstand a +13 dBm (2.8Vp-p) Input signal. The unit amplifies the inputs of AM, FM, SSB and pulse modulations.

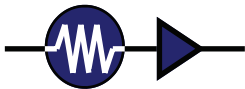
OUTPUT PROTECTION

AG 1006 is protected by its internal control system for 300 Watts of total Forward Power and 70 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.

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AG 1006 Specifications



Class Of Operation

Class B

Frequency Of Operation

20 kHz to 14 MHz - amplifier
20 kHz to 6 MHz - generator

RF Power Output

50 Ohm load:

Up to 200W from 20 kHz to 8 MHz,
Up to 300W from 20 kHz to 4 MHz
<125W to 14 MHz
Pulse and low duty cycle.

Any load:

Up to 150W continuous operation

Gain

55 dB @ 300W / 0.5 MHz
±1 dB

RF Input Drive

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

RF Input Drive for AGC

Recommended -5 dBm to 0 dBm for
±0.5 dB gain flatness

Input Drive Source

Signal or function generator, analog
output capable of up to 1 Vp-p @ 50
Ohm (+5dBm)

Internal RF Source

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

Input and Output Impedance

50 Ohm

2:1 max INPUT VSWR

3:1 max OUTPUT VSWR

Output VSWR Protection

70 W max reflected power limit

Harmonic Level @ 250W

Better than - 12 dBc for 3rd harmonic,
any other > -18 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,
- RS232 port for GUI or other
computer communication. Rear
Panel.
- SubD 25 Analog and Digital I/O .
Port power scale 1V=100W. Rear
Panel

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.

Output Blanking

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

Rear Panel RF Connectors

BNC Female

AC Power Connection

IEC Standard Power Entry followed
by RFI filter.

Filter range 0.1 to 30 MHz minimum.

AC Circuit Protection

Internally fused on the main DC
Power Supply, 15A.

AC Input Current (RMS)

100—120 V ac, 50—60 Hz, 9.0 A
200—240 V ac, 50—60 Hz, 4.5 A
Product Features Power Factor
Correction (PFC)

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

(H 135 x W 356 x L 385) mm
(5.25" x 14" x 15")
Optional Half Rack, 3U High.

Weight

13 kg, 29 lbs.

Mounting

Stand alone unit.
Optional Rack Mount Kit.

Environmental conditions

Temp.: 10° to 40° C ambient
Humidity: 80%

Equipment intended for ISM appli-
cations in laboratory and light in-
dustrial environment.

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