



T&C
Power Conversion

AG 06-380 RF POWER SUPPLY

T&C POWER CONVERSION

Up to 500 Watts RF Power at 380 kHz For Laboratory and Industrial Application.

FEATURING:

- **Up to 500 Watts at 380 kHz**
- **Low distortion level: -40 dBc**
- **Digital Meter, measures forward, reflected and load power VSWR simultaneously**
- **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 Internal RF oscillator**



Power Supply Front Panel

Model AG 06-380 Amplifier/Generator is a dynamic source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, general laboratory and industrial applications.

Featuring leading edge solid state design in all RF amplifier stages and a built-in DDS signal source, it provides everything for a complete and reliable, finely 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 06-380 produces up to 500W of RF Power at a frequency of 380 kHz +/- 5 kHz, with low harmonic distortion. Gain is rated at 57 dB with a typical gain flatness of ± 1 dB. 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 06-380 power measurement system provides an accurate reading on VSWR. When used

as an amplifier, the AG 06-380 is compatible with most signal and function generators, computer synthesizer cards and it accurately reproduces all waveforms within its output and bandwidth conditions.

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 06-380 is built to withstand a +3 dBm input signal. The unit amplifies the inputs of AM, FM, SSB and pulse modulations with low harmonic distortion and output power stability.

OUTPUT PROTECTION

The Model AG 06-380 is protected by its internal monitoring system for 500 Watts of total Forward Power and 80W of Reflected Power. This will protect the RF power supply output stage from 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 retuning.

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AG 06-380 RF Power Supply Specifications

Class Of Operation

Class B

Frequency Of Operation

380 kHz (+/- 5kHz)

Frequency Stability

0.005% or better

RF Power Output

500 Watts nominal into 50 Ohms

Operation as amplifier. Contact T&C for further details.

Output as amplifier in MGC/Burst Mode
0 dBm IN, 1V (5 or 10V) CTL IN pin 5
100W +/-2W

NOTE! Scale for MGC is not linear.

RF Input Drive (as amplifier)

Typical range -20 dBm to 0 dBm
1V (5 or 10V) CTL IN pin 5

RF Input Drive for AGC

Recommended +0 to +3 dBm for the best operation

Input Drive Source(amplifier)

Signal or function generator, analog computer input capable of up to 2 Vp-p @ 50 Ohm

Internal RF Source

Crystal oscillator at 380 kHz +/-5 kHz

Input and Output Impedance

50 Ohm

2:1 max - INPUT MAX
3:1 max - OUTPUT MAX

Output VSWR Protection

80 Watts max reflected power limit. Automatic, limits typically within 0.5 ms after reverse power reaches 80 Watts or power amplifier current preset limit.

Harmonic Level @ 500W

Better than - 40 dBc

Spurious Output

- 50 dBc

BURST operation

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

BURST - external

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

SWEEP operation

380 kHz +/- 5 kHz. Min time 10 ms, max 10s. Settings and activation from GUI only.

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

Output Control Interfaces (Communications)

SubD 25 Analog and Digital I/O .
D-COM "Digital Communication" Port: (Optional)
RS-232
RS-485
USB

Power Monitor Scale Selection

User selectable levels down to 1 watt (in three (3) Scales) within tenths of watt accuracy.
Available scales:
1V=100W
5V=full power
10V=full power

Pulse Specifications

Pulse Width from 2 µs to continues, user defined.

RF Power Margin

(Open Loop Max Power/Rated Power)-1)*100
20 %

RF Connectors

INPUT BNC Female
OUTPUT N Female

AC Power Source

100 to 240 VAC, +/- 10% PFC, 50 - 60 Hz broad input voltage, with no adjustment required

AC Power Connection

IEC Standard Power Entry followed by RFI filter.
Filter range 0.1 to 30 MHz min.

AC Circuit Protection

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

AC Input Current (RMS)

RF Out 500W:
200 to 240V ac, 9 A

Cooling

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

Dimensions

H135mm x W211mm x L445mm
(5.25" x 8.3" x 17.5")

Weight

14.6 kg, 32.5 lbs.

Case

Designed to meet EMI and RFI shielding requirements steel chassis, blackened. Front Panel: T&C off-white.

Mounting

Half Rack, 3U high.
Optional: Rack Mount Kit, Adapter Kit, Coupling Screws.

Environmental conditions

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

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

T&C Power Conversion, Inc.

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AG 06-380 Specifications

PA Output: Chebyshev 3-th order + reflectometer. Impedance matched into 50 Ohm resistive load.

T ambient = 25C

PA configuration: double push-pull

V dc = 46.1V,

Heatsink: copper L=7", W=8.15" (for half rack chassis),

