

# 0313

## RF POWER SUPPLY



*Power Supply  
Front Panel view*



*Power Supply  
Back Panel view*

**300 Watts RF Power at 13.56 MHz for Industrial and Laboratory Applications.**

### FEATURING:

- **13.56 MHz up to 300 Watts in peak power**
- **Low harmonic level at 250W  $h_2 \leq -55$  dBc,  $h_3$  and higher  $< -60$  dBc**
- **Measuring forward, reflected and power VSWR simultaneously**
- **Back Panel Control & Monitoring of all Generators functions. Data acquisition: Status Monitoring & Power Measurement via Analog Port**
- **AGC Power Leveling: Output Power Control to better than  $\pm 2W$  of set value.**
- **Pulse operation in MGC/ Burst mode**

RF Power Supply Model 0313 is a robust source of RF power for laser modulation, plasma generation, general laboratory and general industrial applications.

Featuring leading edge solid state design for all generator stages and a built-in crystal oscillator 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 0313 produces 300W of RF power at a frequency of 13.56 MHz, with low harmonic distortion.

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

0313's power measurement system provides an accurate reading of VSWR. High level VSWR is also monitored for protection of output stage and is set for 50W limit.

When used as an amplifier, the 0313 is compatible with most signal and function generators, computer synthesizer cards and it accurately reproduces all waveforms within its control loop 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.

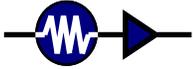
The 0313 is built to withstand a +3 dBm Input signal. The unit amplifies the inputs of AM, and pulse modulations.

### OUTPUT PROTECTION

0313 is protected by its internal monitoring system for 300 Watts of total Forward Power and 50W Reverse Power. This will protect the RF power supply output stage from extreme mismatch at the Output.

### GENERAL

T&C generators 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.



# 0313 RF Power Supply Specifications



## Class Of Operation

Class B

## Frequency Of Operation

13.56 MHz

## Frequency Stability

0.005% or better

## RF Power Output

300 Watts into 50 Ohm nominal

## Operation with external signal:

### Output as amplifier in MGC/Burst Mode

0 dBm IN, (required !)

2VDC CTL IN pin 5 = 200W +/-3W

Note: Scale for MGC is not linear

### Output as amplifier in AGC Mode

Typical range 0 dBm +/- 1 dB

1VDC CTL IN pin 5 = 100W scale

## Input Drive Source(amplifier)

Signal or function generator capable of up to 0 dBm @ 50 Ohm Output

## Internal RF Source

Crystal oscillator at 13.56 MHz

## Input and Output Impedance

50 Ohm

## IN / OUT VSWR

1.2:1 max - input

3:1 max - output

## Output VSWR Protection

50 Watts max reflected power limit. Automatic, limits typically within 0.5 ms after reverse power reaches 50 Watts or power amplifier current preset limit.

## Harmonic Level @ 250W

Better than - 55 dBc for 2-nd harmonic, any other > -60 dBc

## Spurious Output

- 55 dBc noise level generated by internal circuits

## Output Blanking

For specific applications, T&C amplifiers and generators offer blanking of the output signal for minimum noise RF spectrum

## Dynamic Power Range

0 to 300W, settings within +/- 2W

## Output Settings & Control (Communications)

SubD 25 Analog and Digital I/O . Port power scale 1V=100W. Rear Panel

## Pulse Specifications

MGC/Burst operation: pulse width from 2  $\mu$ s to continues, user defined.

## RF Power Margin

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

## RF Connectors

INPUT BNC Female  
OUTPUT N Female  
BLANKING BNC Female  
Rear Panel

## AC Power Source

100 to 120 VAC, 200 to 240 VAC, +/- 10%, 47 - 63 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, 12A.

## AC Input Current (RMS)

### RF Out 300W:

I  $\leq$  8.5A @ 115V / I  $\leq$  4A @ 220V

**Maximum: 12A**

## Cooling

Forced air, temperature controlled, heatsink temperature monitored for equipment safety at 70C limit.

## Dimensions

H135mm x W211mm x L356mm  
( 5.25" x 8.3" x 14" )

## Weight

10.5 kg, 22.5 lbs.

## Mounting

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

## Environmental conditions

**Temp.:** 10° to 35° C ambient

**Humidity:** 80%

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