

T&C
Power Conversion

0313 RF POWER SOURCE



T&C POWER CONVERSION

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, better than -50 dBc for any harmonic**
- **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 Source
Front Panel view*

RF Power Source 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.

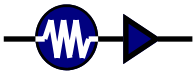
OUTPUT PROTECTION

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.

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0313 RF Power Source 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 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! Check which scale is selected for your unit!

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 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 - 50 dBc for any harmonic.

Spurious Output

- 55 dBc equivalent noise level generated by internal circuits

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

Dynamic Power Range

2 to 300W, settings within +/- 2W
NOTE! 0 to more than 300W

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

MGC/Burst operation: pulse width from 2 µs to continues, user defined.

RF Power Margin

(Open Loop Max Power/Rated Power)-1)*100
>50 %

Rear Panel RF Connectors

INPUT BNC Female
OUTPUT N Female
BLANKING BNC Female

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 300W:

100 -120 V ac, 50-60 Hz, 7.0 A
200 - 240 V ac, 50-60 Hz, 3.5 A
Product Features Power Factor Correction (PFC)

Cooling

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

Dimensions

H133mm x W211mm x L406mm
(5.25" x 8.3" x 16")

Weight

10.5 kg, 22.5 lbs.

Case

Front Panel: T&C White - Powder Coated Steel.
Chrome Steel Covers and Chassis.
Chassis designed to meet EMI RFI shielding requirements

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.

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Page 2 of 2