

T&C
Power Conversion

03-380 RF POWER SOURCE

T&C POWER CONVERSION

Up to 300 Watts RF Power From 380 kHz For Laboratory and Industrial Application.

FEATURING:

- 380 kHz up to 300 Watts
- Low distortion level ≤ -45 dBc
- Measuring forward, reflected and load power and power VSWR simultaneously
- Back Panel Control & Monitoring of all functions.
- Data acquisition: Status Monitoring & Power Measurement at Analog & Digital Ports
- AGC Power Leveling: Gain Control to within $\pm 2W$
- Pulse operation from $2\mu s$ and up in BURST mode
- Internal or External signal source (amplifier operation)



*Power Source
Front Panel view*

RF Power Source Model 03-380 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 for all generator stages and a built-in crystal oscillator 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 model 03-380 produces 300W of RF Power at a frequency of 380 kHz, with low harmonic distortion. Power readings are calibrated into a 50 Ohm Load and they are accurate when unit operates into matched load. Outside of matched condition, the model 03-380 power measurement system reading can be used to estimate VSWR level. High level VSWR is also monitored for protection of output stage and is set for 80W limit. When used as an amplifier, the 03-380 is compatible with most signal and function generators,

computer synthesizer cards and it reproduces all power requests within its control loop 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 03-380 is built to withstand a +3 dBm input signal. The unit amplifies the inputs of AM and pulse modulations.

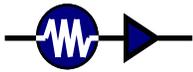
OUTPUT PROTECTION

The Model 03-380 is protected by its internal monitoring system for 315 Watts of total Forward Power and 80W of Reflected Power. This will protect the RF power stage from extreme mismatch at the Output.

DIAGNOSTICS

RF delivery system diagnostics are available to check power operation. This diagnostic routine is started by the push button located on the back panel. The Green/Red LED signals conditions.

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03 380 RF Power Supply Specifications

Class Of Operation
Class B

Frequency Of Operation
380 kHz (+/- 5kHz)

Frequency Stability
0.005% or better

RF Power Output
300 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, 5V or 10V CTL IN pin 5
100W +/-2W
(scale per user choice, pins 4&17)

RF Input Drive (as amplifier)
Typical range -20 dBm to 0 dBm
1V, 5V 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

IN / OUT VSWR
1.2:1 max - input
3:1 max - output

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 @ 300W
Better then - 45 dBc

Spurious Output
- 50 dBc

Output Blanking
T&C amplifiers and generators offer blanking of the output signal for minimum noise RF spectrum

Dynamic Power Range
1 to 300W, settings within +/- 2W
NOTE! Output cutoff below 1W.

Output Settings & Control (Communications)
SubD 25 Analog and Digital I/O .

5V=nominal power default for analog port
10V=nominal power default for digital port
1V=100W available per jumper settings

D-COM "Digital Communication" Port:
RS-232
RS-485
USB

Pulse Specifications
Pulse Width from 2 μ s to continuous, 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, 200 to 240 VAC, +/- 10%, 50 - 60 Hz broad input voltage, with no adjustment required, Power Factor Correction front end Power Supply

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 to 120V ac, max. I = 10 A
200 to 240V ac, max. I = 5 A

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

Dimensions
H135mm x W211mm x L394mm
(5.25" x 8.3" x 15.5")

Weight
14.5 kg, 32 lbs.

Case
Front Panel: Sherwin Williams Greige F63AC78 Coated Steel.
Stainless Steel #301 Covers and Chassis.
Chassis designed to meet EMI RFI shielding requirements

Mounting
Half Rack, 3U high.

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

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