

T&C
Power Conversion

1213 W RF POWER SOURCE



T&C POWER CONVERSION

1200 Watts RF Power at 13.56 MHz for Industrial and Laboratory Applications.

FEATURING:

- **13.56 MHz up to 1200 Watts in peak power**
- **Low harmonic level at 1100W < -50 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 $\pm 12W$ of set value.**
- **Pulse operation in MGC/Burst mode**



RF Power Source Model 1213W 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 current requirements for complete remote control and data acquisition.

OPERATION

The 1213W produces 1200W of RF power at a frequency of 13.56 MHz, with low harmonic distortion. Power meters are calibrated into a 50 Ohm Load and are accurate when unit operates into a matched load. Outside of matched condition, the model 1213's power measurement system provides an accurate reading of VSWR. High level VSWR is also monitored for protection of output stage. When used as an amplifier, the 1213W is compatible with most

signal and function generators, computer synthesizer cards and accurately reproduces waveforms within its control loop bandwidth limits. The 1213W features a combination of forced-air and water cooling systems. The internal power supply designed to permit operation over a wide range of temperature and global AC line conditions.

The 1213W is built to withstand a +3 dBm Input signal. The unit amplifies the inputs of AM, narrow band FM and pulse modulations.

OUTPUT PROTECTION

1213W is protected by its internal monitoring system for 1200 Watts of total Forward Power and 200 W of total Reverse Power. REV automatic fold back reduces output power depending on the level of the actual VSWR.

GENERAL

T&C generators are designed to be reliable. The use of conservatively rated components ensures high reliability and eliminates the need for periodic retuning.

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1213W RF Power Source Specifications

<p>Frequency Of Operation 13.56 MHz</p> <p>RF Power Output 1200 Watts into 50 Ohm nominal</p> <p>Operation with external signal: Output as amplifier in MGC/Burst Mode 0 dBm IN, 10V (10V or 5V) CTL IN pin 5 1200W +/-12W</p> <p>NOTE! Check which scale is selected for your unit! NOTE! Scale for MGC is not linear.</p> <p>RF Input Drive for AGC Mode Recommended +0 to +3 dBm for the best operation</p> <p>Input Drive Source(amplifier) Signal or function generator, analog input capable of drive 0 to 3 dBm @ 50 Ohm</p> <p>Internal RF Source Crystal oscillator at 13.56 MHz Stability: 0.005% or better</p> <p>Input and Output Impedance 50 Ohm</p> <p>IN VSWR 1.2:1 max - input OUT VSWR 3:1 max - output</p> <p>Output VSWR Protection 200 Watts max reflected power limit. Automatic foldback limit with [W] level of protection depending on actual VSWR of a load connected.</p> <p>Harmonic Level @ 1100W Better than - 50 dBc</p> <p>Spurious Output 55 dBc noise level generated by internal circuits</p>	<p>Dynamic Power Range ~ 1 to 1200W, settings within +/- 12W</p> <p>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</p> <p>RF Output Settings & Control - SubD 25 Analog and Digital I/O . Rear Panel - Optional: RS232, RS485, and USB2.0 ports for GUI or other computer communication. Rear Panel.</p> <p>Output Control Interfaces (Communications) SubD 25 Analog and Digital I/O . Optional: D-COM "Digital Communication" Ports: RS-232 RS-485 USB 2.0</p> <p>Power Monitor Scale Selection User selectable levels down to 1 watt (in two scales) within tenths of watt accuracy. Available scales: 5V=full power 10V=full power (default)</p> <p>BURST Specifications Pulse Width from 2 µs to continues, user defined.</p> <p>RF Power Margin (Unlimited Max Power Available / Rated Power)-1)*100 25 %</p>	<p>Back Panel Connectors INPUT BNC Female OUTPUT N Female Optional: Digital I/O : RS232, USB2.0, RS485</p> <p>AC Power Connection Non-detachable power cord anchored with compression bushing. Back Panel</p> <p>AC Circuit Protection Internally fused on the main DC Power Supply, 15A.</p> <p>AC Input Current (RMS) RF Out 1200W: 200-240 V ac, 50-60 Hz, 10 A</p> <p>Cooling Forced air, water at 20C-25C with flow > 1GPM (4LPM). Heatsink temperature monitored for equipment safety, 70C limit.</p> <p>Water Inlet and Outlet The connection provided accepts a 1/4-inch NPT male pipe thread.</p> <p>Dimensions L 458 mm x W 210 mm x H 140 mm (18" x 8.3" x 5.5")</p> <p>Weight 9 kg, 20 lbs.</p> <p>Mounting 1/2" Rack, 3U high. Optional: Rack Mount Kit, Adapter Kit, Coupling Screws.</p> <p>Environmental conditions Temp.: 10° to 40° C ambient Humidity: 80% Equipment intended for ISM applications in laboratory and light industrial environment.</p>
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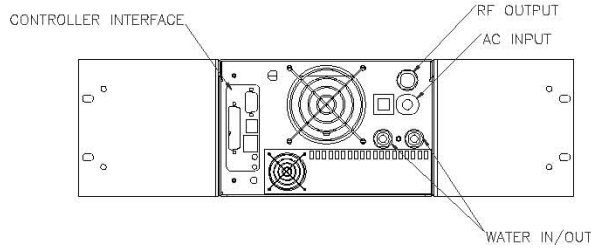
Sales

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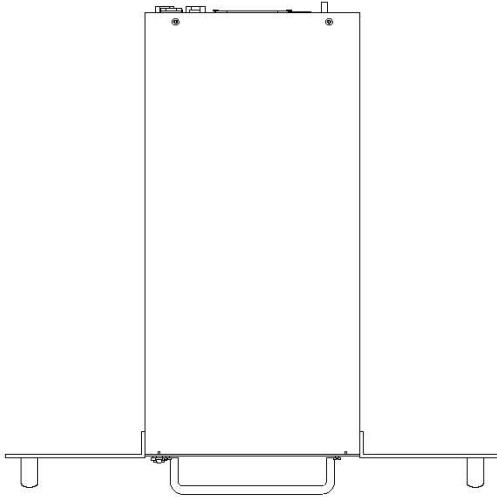
DIMENSIONS ARE IN: MILLIMETERS [INCHES]

BACK VIEW



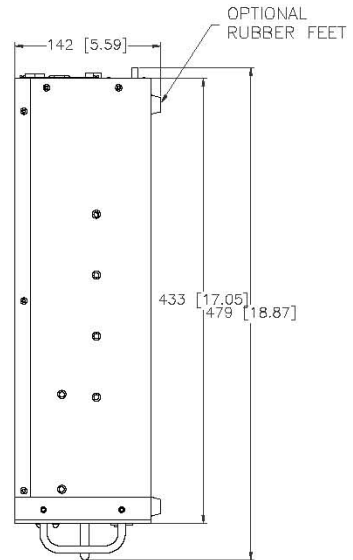
TOP VIEW

MIN 1" [25.4] CLEARANCE FOR PROPER AIR EXHAUST

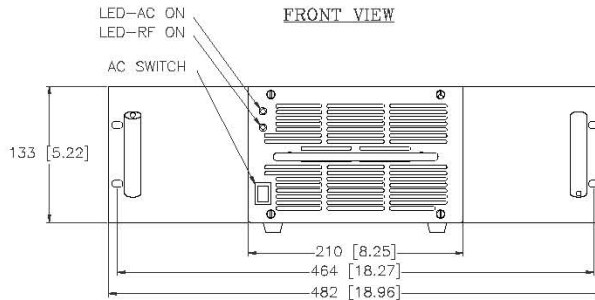


MIN 2" [50.8] CLEARANCE FOR PROPER AIR INTAKE

SIDE VIEW



FRONT VIEW



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**MOUNTING AND OUTLINE
1213W**

T&C Power Conversion, Inc.

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APPROVALS	DATE	SIZE A		DWG. NO.	REV. A
DRAWN RMS	6.4.07	9100 0236 90			
CHECKED		SCALE	NONE	SHEET	1 OF 1
ISSUED					