

Amplifiers

Model 10000A225D

Features:

- 10000 W CW, 10 kHz – 225 MHz
- Class A design
- 100% mismatch tolerant
- Built-in fault monitoring and protection
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service

Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing

To view our full amplifier portfolio visit: www.ar.ametek-cts.com

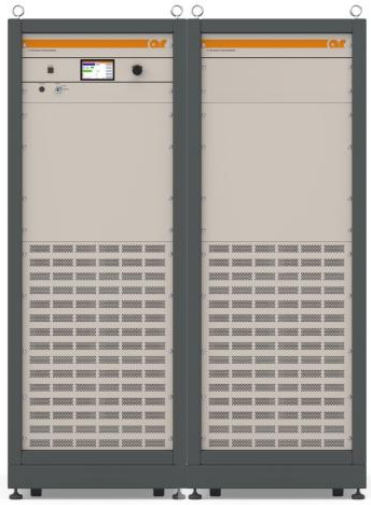
AR RF/Microwave Instrumentation
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Souderton, PA 18964
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ISO 9001: 2015 Certified
ISO 17025 :2017 Accredited

The updated 10000A225D is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier. It is designed for applications requiring instantaneous bandwidth, high gain, and linearity, providing a minimum of 10 kW of RF power. The amplifier features protection from input overdrive beyond 0 dBm, as well as safeguards against various failure conditions including over-temperature and power supply faults.

An easy-to-read front panel display indicates operational status and fault conditions. All amplifier control functions and status indications are available remotely using GPIB/IEEE-488, RS-232, fibre-optic serial, USB, or Ethernet. Interface connectors are located on the back panel. Local and remote operation can be managed by a switch on the front panel.

This high-power Class A amplifier is ideal for EMC test applications due to its low level of spurious signals and exceptional linearity, enabling continued operation into high VSWR loads.

The export classification for this equipment is EAR99. These commodities, technology, or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



10000A225D

- **10000 W**
- **10 kHz – 225 MHz**

Electrical Specifications					
Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**
Rated Power Output (0.01 – 100MHz)	PSAT	10000	12500	>13000	W
Rated Power Output (100 – 225MHz)	PSAT	7000	9500	>10000	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3 dB Compression (0.01 – 50MHz)	P3dB	10000	12000	>13000	W
Power Output @ 3 dB Compression (50 – 100MHz)	P3dB	9500	12000	>13000	W
Power Output @ 3 dB Compression (100 – 145MHz)	P3dB	7500	9500	>10000	W
Power Output @ 3 dB Compression (145 – 180MHz)	P3dB	6000	8000	>9000	W
Power Output @ 3 dB Compression (180 – 225MHz)	P3dB	6500	8000	>9000	W
Power Output @ 1 dB Compression (0.01 – 50MHz)	P1dB	10000	11000	>11000	W
Power Output @ 1 dB Compression (50 – 100MHz)	P1dB	8000	9000	>10000	W
Power Output @ 1 dB Compression (100 – 145MHz)	P1dB	5500	8000	>9000	W
Power Output @ 1 dB Compression (145 – 180MHz)	P1dB	4000	5500	>7000	W
Power Output @ 1 dB Compression (180 – 225MHz)	P1dB	5000	5500	>7000	W
Operating Frequency	BW	0.01		225	MHz
Gain (Small Signal)		70	75		dB
Gain Reduction Adjustment (when below gain compression)		0		20	dB
Flatness @ small signal (-20 dBm input, -15 @ 225 MHz)	ΔG		±1.5	±2.5	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
3rd Order Intercept	IP3		77		dBm
Noise Figure	NF		15		dB
Harmonic Distortion @ 7500 W (0.01 – 100MHz)	H2, H3		-20	-20	dBc
Harmonic Distortion @ 7500 W (50 – 90MHz)	H2, H3		-20	-15	dBc
Harmonic Distortion @ 6000 W (100 – 225MHz)	H2, H3		-20	-15	dBc
Spurious			-73		dBc
Power Consumption	PD			35	kW

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Absolute Maximum Rating

Exceeding any of the limits listed here may result in permanent damage to the device.

Parameter	Minimum	Typical	Maximum	Unit
RF Drive			0	dBm
RF Load		1:1	∞	VSWR
RF Load Reflected Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry. Load mismatch above 6:1 may limit output reflected power to 50% of minimum rated power.			50	%
AC Power (3-phase) Low voltage option	200		240	VAC
AC Power (3-phase) High voltage option	380		415	VAC
AC Power	47	60	63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	Normal Truck Transport			

Mechanical Specifications

Parameters	Typical	Unit
Dimensions (W x H x D) (2 x 35U Rack)	112.2 x 181.6 x 97.8	cm
	44.2 x 71.5 x 38.5	in
Weight	590	kg
	1300	lb
Cooling	Forced air (self-contained fans)	
Acoustic Noise Measured @ 1 Meter	83	dBA

Connector Interfaces

Function	Type
RF Input	N, female, rear (50 Ω) (option front)
RF Output	1-5/8 EIA, male, rear (50 Ω)
RF Sample	N, female, rear (50 Ω) (70dB typical) (option front)
IEEE-488	24-pin
RS-232	9 pin subminiature D
Ethernet	RJ-45
RS-232 (fiber optic)	ST
USB 2.0	Type B
Interlock	15-pin subminiature D

Regulatory Compliance	
Type	**Standard**
EMC	EN 61326-1
Safety	UL 61010-1
	CAN/CSA C22.2 #61010-1
	CENELEC EN 61010-1
RoHS	Directive 2011/65/EU
Export	EAR99

Ordering Options

10000A225D	-		-	N	-	R	-	158	-		-	
Model		**RF IN Conn Location, Type**				**RF OUT Conn Location, Type**				**RF Sample Ports**		**Primary Power**

CONNECTOR LOCATION	
Front	F
Rear	R

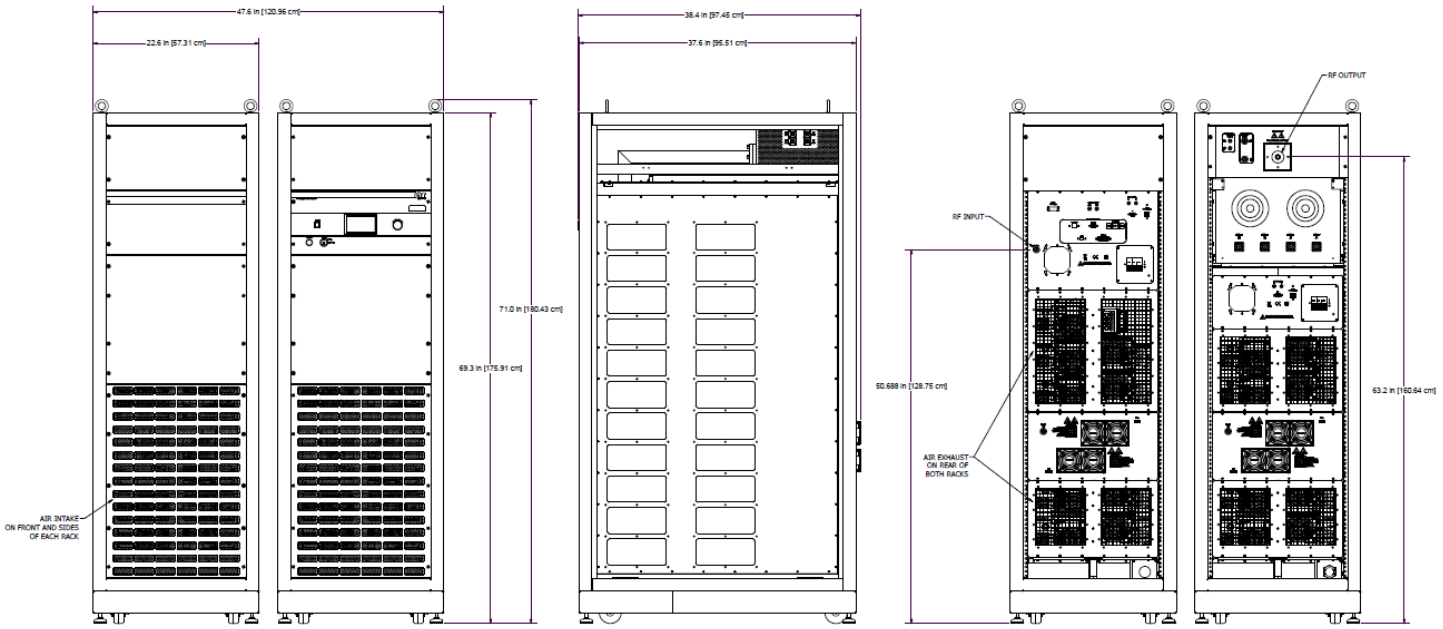
RF SAMPLE PORTS	
Front	SPF
Rear	SPR

PRIMARY POWER	
200-240 VAC	LV
380-415 VAC	HV

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Envelope Drawing

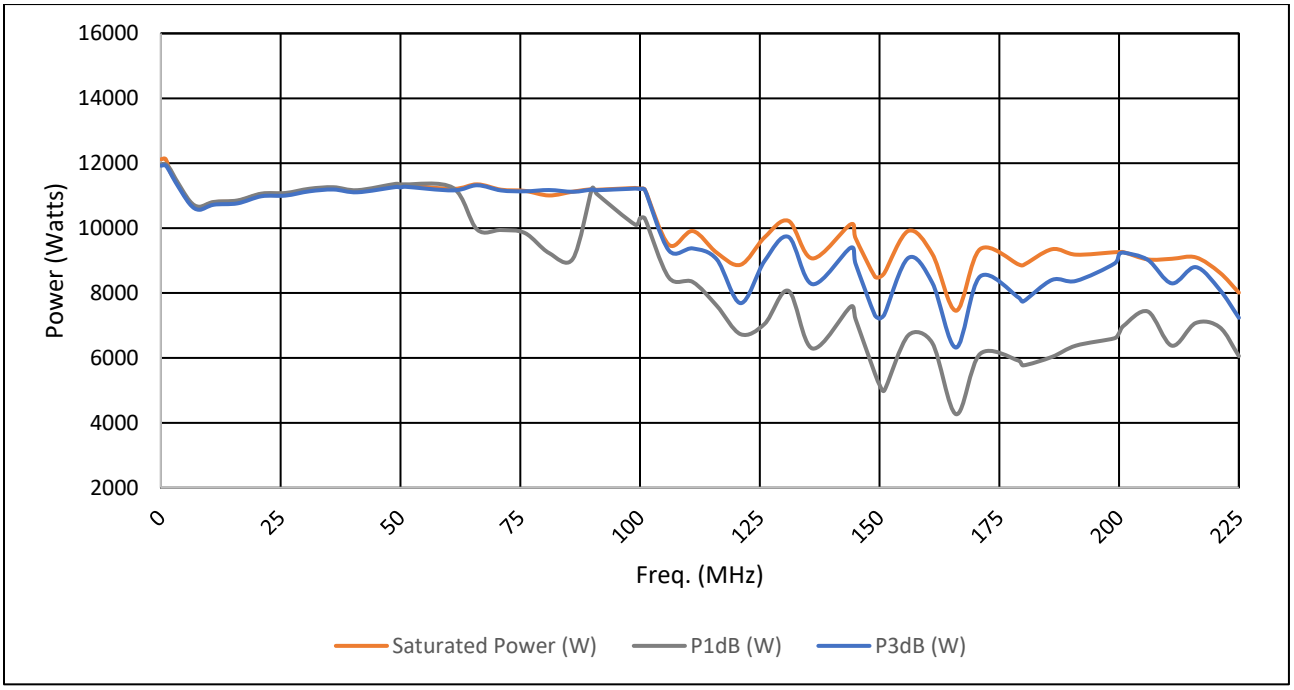


FRONT VIEW
SCALE 1 / 6

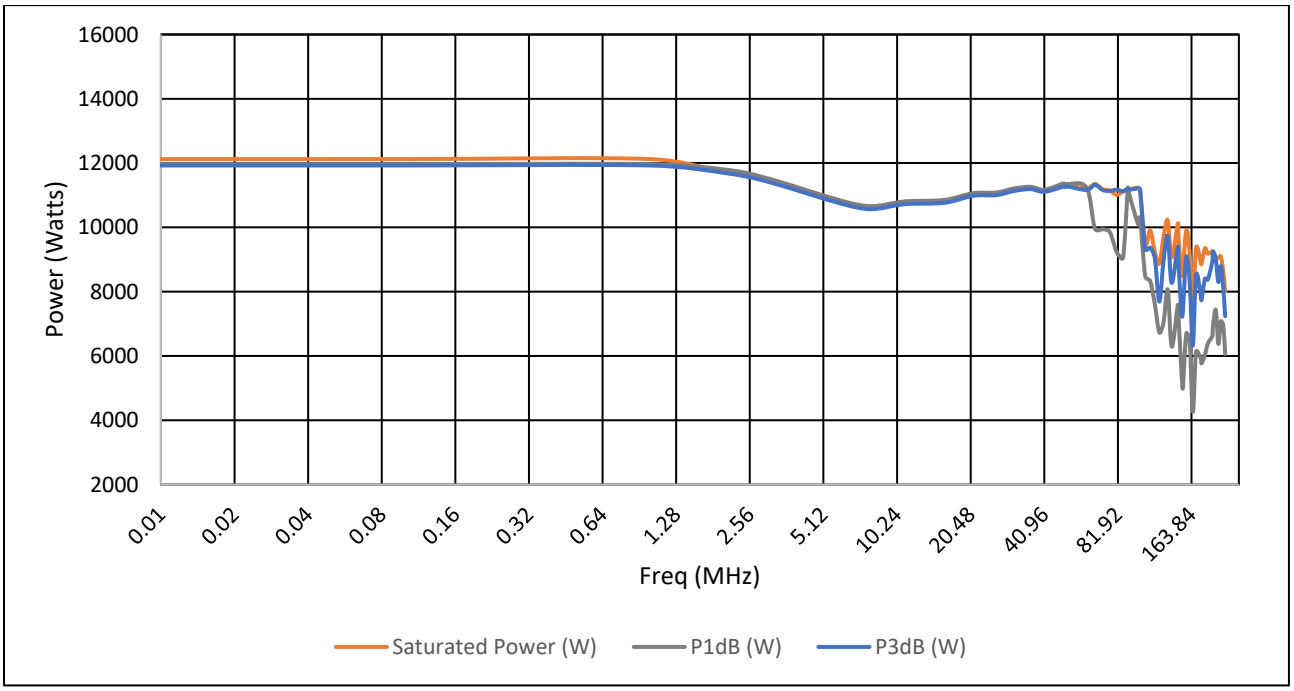
SIDE VIEW
SCALE 1 / 6

REAR VIEW
SCALE 1 / 6

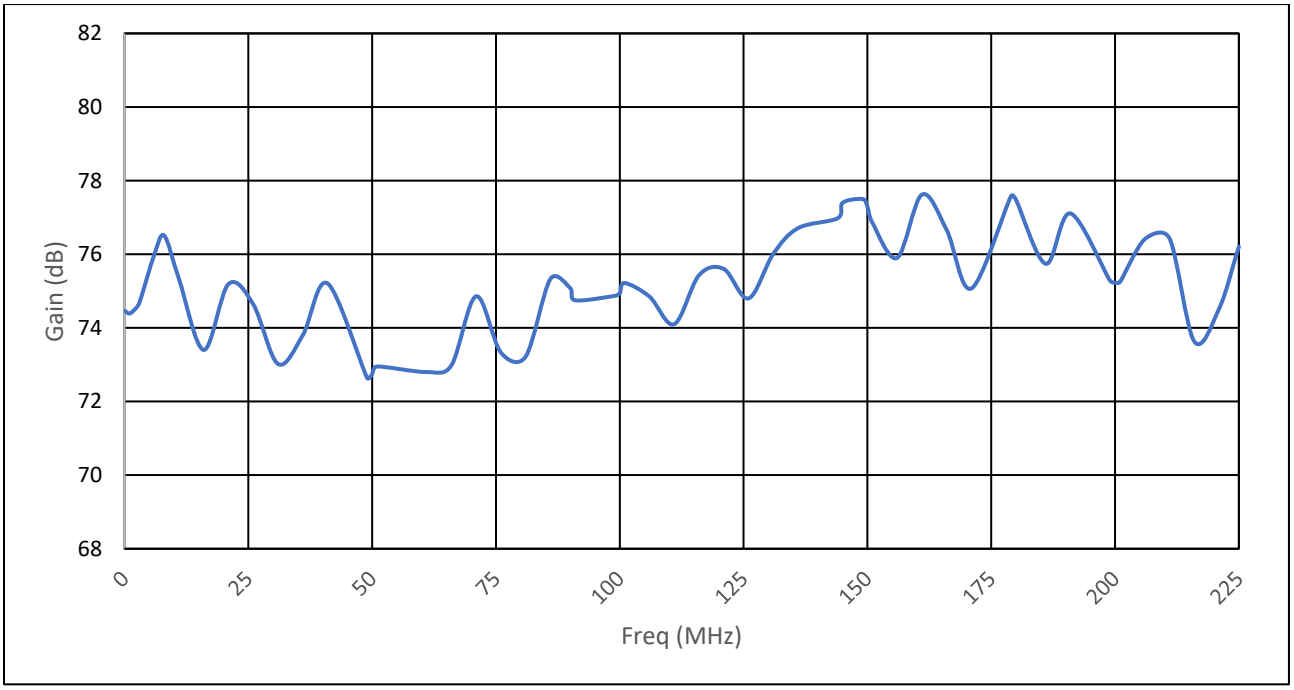
TYPICAL OUTPUT POWER (LINEAR FORMAT)



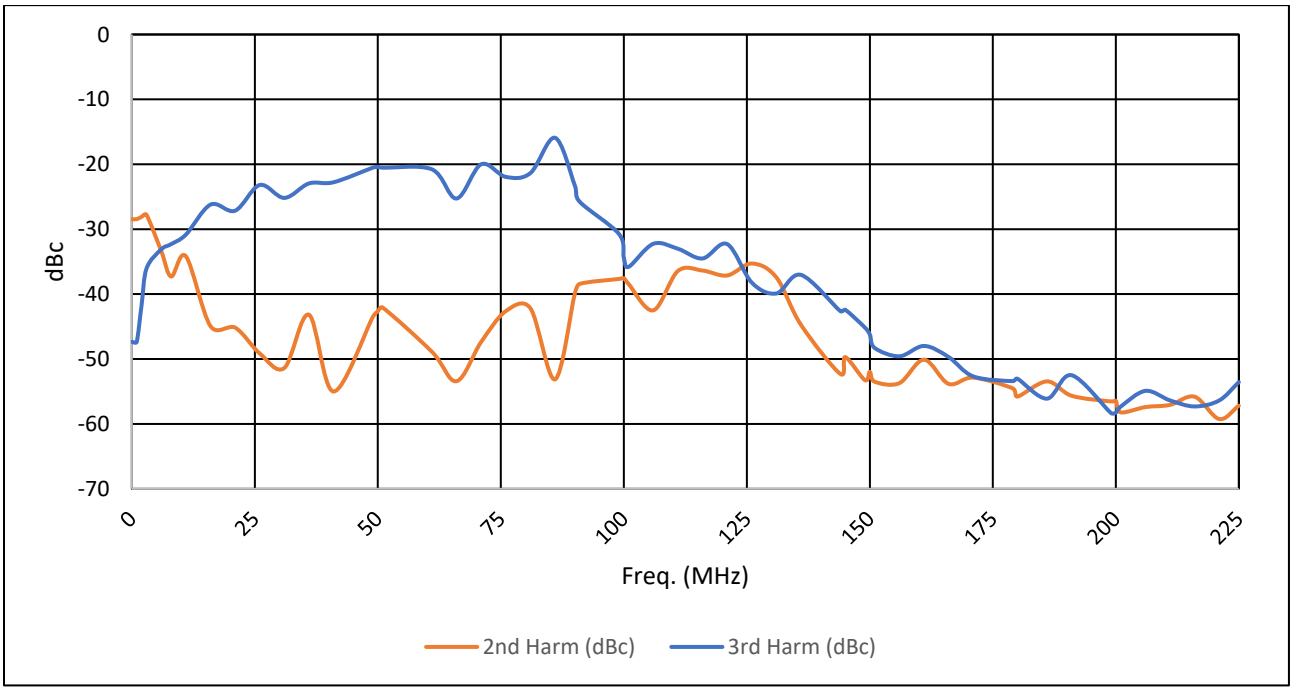
TYPICAL OUTPUT POWER (LOG FORMAT)



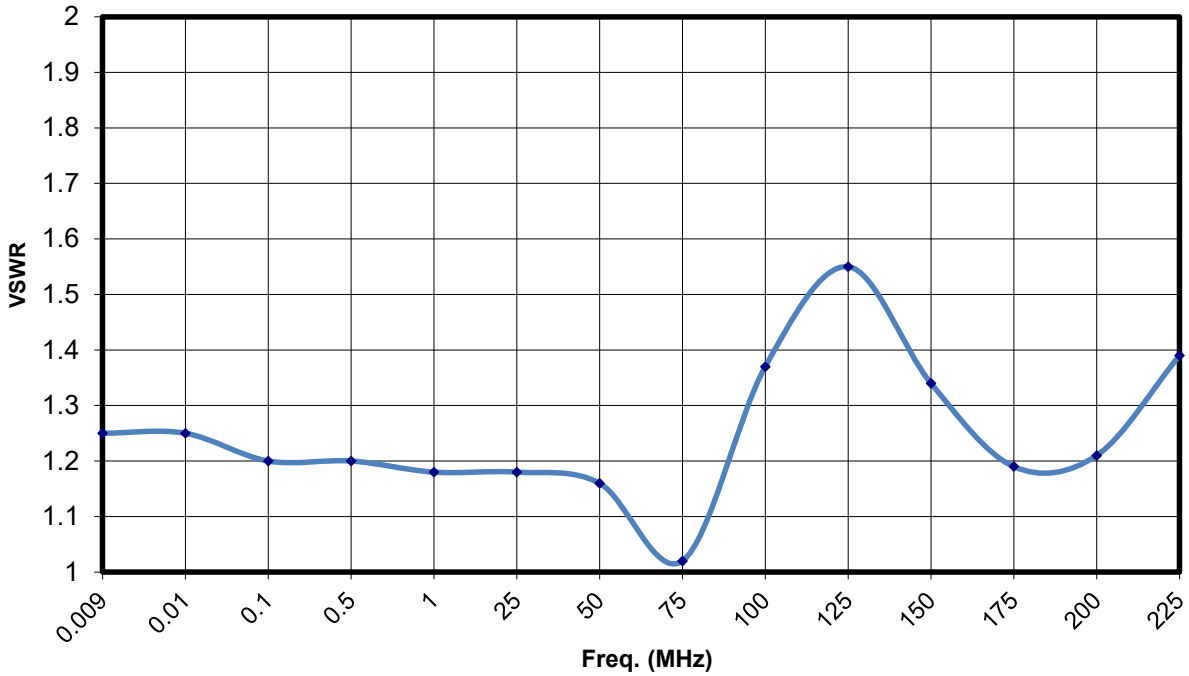
TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



TYPICAL HARMONICS @ 7500 WATTS



TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE

