



AA-12G-4KW-PT

1.0 - 2.0 GHz, 4000 W, 66 dB Min. TWT High Power Pulse Amplifier

FEATURES

- Small form factor 5U chassis
- Modern TWT design with internal monitoring
- Instantaneous L-Band octave bandwidth
- Suitable for linear high peak pulse applications
- Built-in protection circuits
- Versatile interface options
- High reliability and ruggedness



RF SPECIFICATIONS

Parameter	Specification	Notes
Operating Frequency Range	1.0 - 2.0 GHz	
Power Output @ Peak Pulse	4.0 KW Min	
Power Ripple	+/- 0.1 dB (maximum)	
Output Peak Power	+66 dBm (minimum)	
Input Power (for Rated Output)	0 dBm (typical)	
Spurious Output	0-250 Hz > 250 Hz	-55 dBc (minimum) -60 dBc (minimum)
Load VSWR	2:1 (maximum)	
Output VSWR Protection	100%	
Duty Cycle	6%	
Gain (for rated output)	66 dB (adjustable)	
Gain Stability	0.25 dB/24 hours (typical)	

*Optionally customer may specify maximum input power.

RF SAMPLING SPECIFICATIONS

Parameter	Specification	Notes
RF Output Pulse Video Sample	+ 10 mv/kw into 50Ω	
RF Output Power Sample	-40 dB	
RF Interstage Power Sample	-20 dB	
RF Input Power Sample	-20 dB	

MODULATION SPECIFICATIONS

Parameter	Specification	Notes
Pulse Width	0.1μs to 100μs	
Repetition Rate	0-500 kHz	
Rise and Fall Time	100 ns (maximum)	
Drift	0.01 dB/μs (maximum)	
Pulse Jitter	+/- 2.5 ns	
Video/RF Throughput Delay	300 ns (maximum)	



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ELECTRICAL SPECIFICATIONS

Parameter	Specification	Notes
Primary Input Power Mains	240+/-10%/1p/60Hz	
Primary Power Consumption	1.3 kVa (maximum)	
Elapsed Time Meter	00,000.00 hours 100%	
Modulation Input Pulse	+5v TTL	
Digital Interface	Ethernet (LAN)/RS-232	

*LAN Optional

MECHANICAL SPECIFICATIONS

Parameter	Specification	Notes
Front Panel	Standard RETMA .125" thick with slotted mounting holes	
Dimensions - Front Panel Depth	Width: 19" Height: 8.75" Chassis: 26" Overall: 28"	
Finish - Front Panel Chassis	Anodize, Color Blue	
Weight	85 Pounds (typical)	
Cooling	Self-Contained Forced Air	

ENVIRONMENTAL SPECIFICATIONS

Parameter	Specification	Notes
Operating Temperature	0.1 to +50C Derate to 10C for 10,000-foot Operation	
Storage Temperature	-40 to +85C	
Humidity	0 to 95% non-condensing	
Altitude	0 to 10,000 feet above sea level, 50,000 non-operating	



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DIGITAL INTERFACE RS-232

RS-232 interface provides ability to remotely operate, monitor, control and adjust the system. IEEE-488, an optional feature, provides the ability to remotely operate, monitor and control operation of the amplifier. Any fault condition latches information. Ethernet (LAN) and RS-422 are also available. Software is provided to operate with MS Windows.

CONDITIONS MONITORED AND INTERLOCKED

Parameter	Specification	Notes
VSWR	0.00%	
Body Voltage	00.00 kV	
Body Current*	00.00 mA	
Heater Voltage*	0.00 V	
Heater Current*	0.00 A	
Grid Bias Voltage*	000.00 V	
Grid Pulse Amplitude*	000.00 V	
Access Lid Interlock	Fault	
Excessive Temperature	Fault	
PRF Limit*	Fault	
Pulse Width Limit*	Fault	
Pulse Received	Yes/No	

* The following parameters and associated High/Low limits are factory adjustable (including Cathode Voltage).

CONTROLS & INDICATORS

Front Panel	<ul style="list-style-type: none"> • Switches • Illuminated Status Monitor • Off/Standby/Operate/Reset • Warm-up/Standby/Operate/Reset
Accessories Supplied (1-Each)	<ul style="list-style-type: none"> • Maintenance Manual • Primary Input Power Mating Connector • CD ROM: Computing Operating Software

Connectors	Type	Notes
RF Input (Rear Panel)	N(f)	
RF Output (Rear Panel)	SC(f)	
RF Samples (Front Panel)	N(f)	
RF Output Pulse Video Sample (Front Panel)	BNC(f)	
Modulation Input Panel (Front Panel)	BNC(f)	

Conditions Monitored and Interlocked	Adjustable Parameters	Notes
RS 232	DB 25 F (Rear Panel)	
IEEE-488 (Optional)	GPIB (Rear Panel)	
Ethernet (Optional)	RJ-45	
Primary Power Input	NEMA L5-20 (Three Wire)	
Remote Control	DB-25	

NOTE: RF Connectors may be optionally located on either the front or rear panels.



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CONTROLS AND INDICATORS (OPTIONAL)

Operation	The front panel display is active whenever TWTA is powered on.
Standard Mode	Warm-up (with time remaining) Standby Operate (with pulse indication) Fault (with fault name)
Diagnostics Mode	Following parameters are available through menu: Heater voltage, heater current, grid bias voltage, grid drive voltage, helix voltage, helix current, collector voltage, collector current, cathode current, VSWR.

OPTIONS

Option E-rack Mounting	Allows the unit to be mounted in a standard EAI 19" rack cabinet, incorporating side mounted sides.
Option G- 400Hz	Provides for 400 Hz AC frequency operation.
Option J- Outputs Isolator	Protects the TWT from varying load VSWR conditions. Insertion loss of the isolator will lower the output power slightly (0.5 dB typically) from normal. Call the factory for configuration and dimensions (isolator may be provided externally).
Option X- Reflected Power Protection	Protects the TWT from high load VSWR and intended for use on ultra-wide band or high-power units for which isolators are not normally available. Consists of a coupler and detector that turns the TWTA off when excessive reflected power is sensed. Typical insertion loss is 0.5 db.