



40W to 125W
AWMA-3000K™ series



Features

- Remote Monitor & Control
- High gain and linearity
- Output power up to 125W (see table A)
- Gain adjustment
- Output sample monitor port
- Field-Replaceable Power Supply
- Temperature gain compensation
- Automatic over-temperature shutdown
- Automatic high reflected power shutdown
- Infinite VSWR protection
- CE Marking

Overview

The AWMA-K series are the outdoor solid-state power amplifiers (SSPAs), operating in Ku-Band frequency range. The amplifier is an integrated unit, complete with power supply and cooling system. Intended for outdoor operation, the AWMA-3000K™ are weatherproof and provide the utmost in convenience and efficiency. Built-in microprocessor controller provides the capability of Ethernet or serial port interfaces (RS232/485) for remote monitoring and control.

Advantech's hub-mount SSPAs set the industry standard for linearity and operating efficiency. Built-in design features and assembly methods incorporated with efficient combining techniques result in the trouble-free operation of the amplifier.

Application

The SSPAs are designed for Ku-Band satellite up-link applications. They are mounted outdoors, near the hub of an antenna. The AWMA-K series are available in output power up to 500W. For higher power - up to 800W - Advantech provides phase-combined systems.

Other SSPA's are available for operation at other satellite frequency bands. Also available from Advantech are the SSPB series with all the features of the AWMA-K plus a built-in block up-converter.

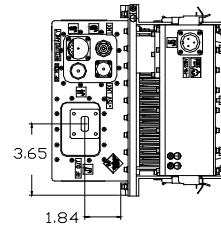
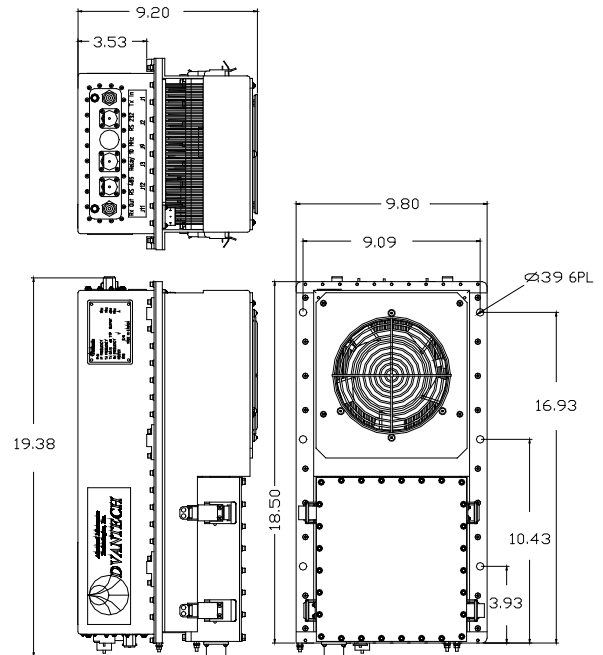


Table A

| Band | RF Band (GHz) | Output Power (W) |
|------|---------------|------------------|
| KS | 14.0 – 14.5 | 40 - 125 |
| KX | 13.75 - 14.5 | 40 - 125 |
| KL | 12.75 - 13.25 | 40 - 60 |

Options

- External Receive Reject Filter
- Ethernet Interface
- Redundant system
- Remote Monitor & Control Panel

Redundancy

With the addition of the appropriate waveguide and switch kit, the AWMA-3000K™ amplifiers can be easily converted for the operation in 1:1 redundant configuration with full remote monitor and control capability of the redundant system via serial interface. Single Monitor and Control interface is required to manage redundant system.

Ku-Band Hub-mount SSPA



| Technical Specifications | 40W | 50W | 60W | 80W | 100W | 125W |
|---------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------|---------------|-----------|---------------|
| Electrical Characteristics | | | | | | |
| Availability in this series | | | | | | |
| KS | √ | √ | √ | √ | √ | √ |
| KX | √ | √ | √ | √ | √ | √ |
| KL | √ | √ | √ | Note 1 | Note 1 | Note 1 |
| Output power (P _{SAT}) (dBm) | +46 dBm | +47 dBm | +48 dBm | +49 dBm | +50 dBm | +51 dBm |
| Output power (P _{1dB}) min. (dBm) | +45 dBm | +46 dBm | +47 dBm | +48 dBm | +49 dBm | +50 dBm |
| Power gain at maximum setting | 57 dB min | | 58 dB min | | 60 dB min | |
| Frequency range | See table A on front page | | | | | |
| Gain adjustment range | 20 dB min | | | | | |
| Max input power without damage | +10 dBm | | | | | |
| Gain flatness | 2.0 dB max over 500 MHz, ± 0.6 dB over 40 MHz at 25°C | | | | | |
| Gain slope | 0.015 dB/MHz, max | | | | | |
| Gain variation over temperature | ±1.5 dB over full operating range | | | | | |
| Gain variation over 24 hours | ±0.25 dB max at constant temperature & drive level | | | | | |
| Input return loss | 18 dB min | | | | | |
| Output return loss | 20 dB min | | | | | |
| Output Noise Power Density | -75dBm/Hz, max -145dBm/Hz max in 10.95GHz – 12.75GHz | | | | | |
| Spurious at rated power | -65 dBc max | | | | | |
| Harmonics at rated power | -90 dBc max | | | | | |
| AM/PM conversion | 2.5°/dB max (at P _{1dB}) | | | | | |
| Third order IMD (2 tones 5 MHz apart) | -25 dBc max at 3 dB total back-off from rated P _{1dB} | | | | | |
| Group Delay | Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz ² max. Ripple: 1 nsec p-p max. | | | | | |
| Residual AM (F* - frequency in kHz) | 0-10 kHz -45 dBc 10 kHz - 500 kHz -20 (1.25+log F*) dBc 500 kHz - 1 MHz -80 dBc | | | | | |
| Power Requirements | | | | | | |
| AC input voltage | 110 /220 VAC auto ranging (47-63 Hz) | | | | | |
| Power consumption, (nominal) (W) | 450W | 500W | 550W | 650W | 900W | 1050W |
| Mechanical Characteristics | | | | | | |
| Dimensions (L x W x H) | 18.5"x 10" x 9" (47 x 25.4 x 22.8) cm | | | | | |
| Weight (with mounting frame) | 44 lbs (20 kg) | | | | | 48.5 (22 kg) |
| Interfaces: | RF input | Type N (F) | Redundancy | MS3112E16-26P | RF output | WR-75 contact |
| | Discrete port | MS3112E12-10P | | RS-232 | | MS3112E10-6P |
| | AC Line | MS3102E20-19P | | RS-485 | | MS3112E10-6P |
| Environmental Conditions | | | | | | |
| Temperature | Operating | -30°C to +50°C Option 1: -40°C to +55°C; option 2: -50°C to +50°C | | | | |
| | Storage | -55°C to +85°C | | | | |
| Humidity | 100%, condensing (2" rain/hour) | | | | | |
| Altitude | 10,000' AMSL, derated 2°C/1,000' from AMSL | | | | | |

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