

GUARDIAN¹ ASP^{50/100}

ACTIVE SINGLE CHANNEL SUBWOOFER PROTECTION DEVICE

DATASHEET V1.0 | 9-7-2026

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PRODUCT DESCRIPTION

The Guardian¹ is a single-channel active protection system for Amina's range of ALF50 and ALF100 subwoofers. The fixed-configuration 50 and 100 variants of the Guardian¹ ASP feature an active, 2-stage circuit design which responds to RMS and peak audio events almost instantly, providing protection from overdriving for Amina Subwoofers, in an appropriately configured audio system.

RMS or average voltage protection continually monitors the power delivery over a short time window to detect any potential for thermal overload.

Peak voltage protection continually monitors for excessively powerful short-duration peaks which may otherwise have the potential to cause the subwoofer to exceed its mechanical limits.

If and when the peak or RMS monitoring thresholds are exceeded, the signal to the subwoofer is attenuated, automatically returning to a normal state once safe to do so.



APPLICATION

The Guardian¹ is intended to be a last-line-of-defence against accidental overloading and should not be used as a volume limiter or for gain reduction. It is always best practice to configure the audio system in a way that prevents overdriving or 'trip' events which interrupt the user experience. Amplifiers must be appropriately specified and the channel power output must be appropriately configured to the subwoofer it is driving.

The maximum amplifier channel power rating limit is 500W per channel of protection.

COMPATIBILITY

MODEL	SUBWOOFER
Guardian ¹ ASP50	ALF50SM
Guardian ¹ ASP100	ALF100SM, ALF100CV, ALF100CMR

SPECIFICATIONS

Number of Channels	1
Signal Connection	Phoenix Connectors (2.5mm to 1mm core conductor / 10-18 AWG)
Power Connection	Female Micro-USB (1m [39 ³ / ₈ "]) USB-A > Micro-USB Cable Provided)
Power Requirement	5V / 1A
Product Weight	65g (2 ⁵ / ₁₆ oz)
Product Dimensions (Including Connectors)	90mm x 48mm x 24mm / (3 ⁹ / ₁₆ " x 1 ⁷ / ₈ " x ¹⁵ / ₁₆ "
Compatible Subwoofer Models	ALF50SM, ALF100SM, ALF100CV, ALF100CMR
Maximum Amplifier Channel Power	500W
Relevant Regulatory Standards	CE Low Voltage Directive (LVD)
Manufacturer Limited Warranty	3 Years

GUARDIAN¹

Amina Technologies Limited

Cirrus House, Glebe Road, Huntingdon, Cambridgeshire, PE29 7DL, England
+44 (0) 1480 354390 | info@aminasound.com | www.aminasound.com

GUARDIAN¹ASP^{50/100}

ACTIVE TWO CHANNEL LOUDSPEAKER PROTECTION DEVICE

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INSTALLATION

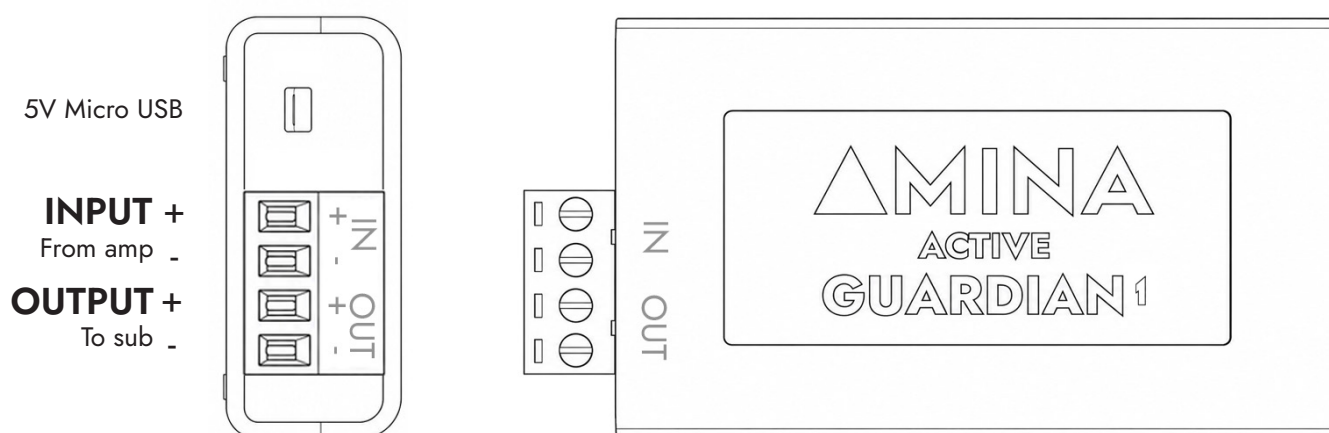
The Guardian¹ is designed to connect between the amplifier and subwoofer. It should be installed in an accessible location, usually behind the amplifier in the AV rack, and provides protection for a single subwoofer. Guardian protection devices should never be installed in wall or ceiling cavities.

Amplifiers must be appropriately specified, and the channel output power must be configured to match the connected subwoofer. The maximum amplifier channel power rating that can be connected to the Guardian¹ is 500 W.

CONNECTION

Audio connections are made using the included industry-standard Phoenix connectors as shown in the image below. Please pay attention to the connection polarity printed on the device.

Power is supplied via the included USB cable, connected to any 5V, 1A supply. If none are available, a suitable external power supply must be sourced.



COMMISSIONING

The Guardian is a microprocessor-controlled in-line loudspeaker protection device and does not provide any digital signal processing functions such as high-pass or low-pass filtering, equalisation or crossover implementation. During normal operation, the Guardian continuously monitors the amplifier output without modifying or processing the audio signal. It only intervenes in the signal path when a protection threshold is exceeded, significantly attenuating the loudspeaker to prevent damage before automatically restoring operation once safe conditions have returned.

Any required crossover filtering, including the appropriate low-pass filter for the subwoofer, must therefore be configured within the driving amplifier's DSP or an upstream electronic crossover prior to the amplifier. The Guardian should be considered complementary to these functions, providing loudspeaker protection only and not replacing the system's signal processing requirements.



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