

# GRAS 26AA

1/4" Preamplifier with Integrated Cable for Intensity Probes



Freq range: 2.5 Hz - 200 kHz

Noise: 1.8  $\mu$ V

Gain: -0.29 dB

Special feature: For GRAS intensity probe  
handles with 4-pin LEMO connectors

The 26AA GRAS 1/4" Preamplifier is a small robust unit optimized for acoustic measurements using condenser microphones. It has a very low inherent noise level, a wide dynamic range and a frequency response from below 2 Hz to above 200 kHz.

## Design

All GRAS microphone preamplifiers are based on a small ceramic thick-film substrate with a very high input impedance. The ceramic substrate is shielded by a guard ring to minimise the influence of stray capacitance and microphonic interference. The casing is made of stainless steel for maximum strength and durability. The small dimensions of this preamplifier ensure reliable operation under humid conditions owing to the heat generated by internal power dissipation.

## Dynamic Range

26AA can handle both single and dual-sided power supplies. The supply can vary between 28 VDC and 120 VDC single-sided or  $\pm 14$  VDC and  $\pm 60$  VDC dual-sided. When using the high supply voltage (120 VDC or  $\pm 60$  VDC), the dynamic range exceeds 140 dB.

## Noise

The electrical circuit in 26AA is built on a ceramic substrate using selected low-noise components to gain very low self-noise. The electrical self-noise is so low that system noise is mainly determined by the microphone capsule's thermal noise.

## Frequency response

The low-frequency cut-off of the 26AA preamplifier is mainly determined by the input impedance of the preamplifier and the capacitance of the microphone capsule. The capacities 20 pF, 6.5 pF and 3 pF equal the typical capacitances of  $\frac{1}{2}$ ,  $\frac{1}{4}$  and  $\frac{1}{8}$  microphone capsules respectively. The high-frequency cut-off is determined by the preamplifier's ability to drive capacitive loads (slew rate), caused by the cable. For large-signals, the effects of these parameters must be accounted for when measurements are performed. The output level is in decibels relative to 1 Volt. Typical capacitance for the cable is 100pF/m (30pF/foot).

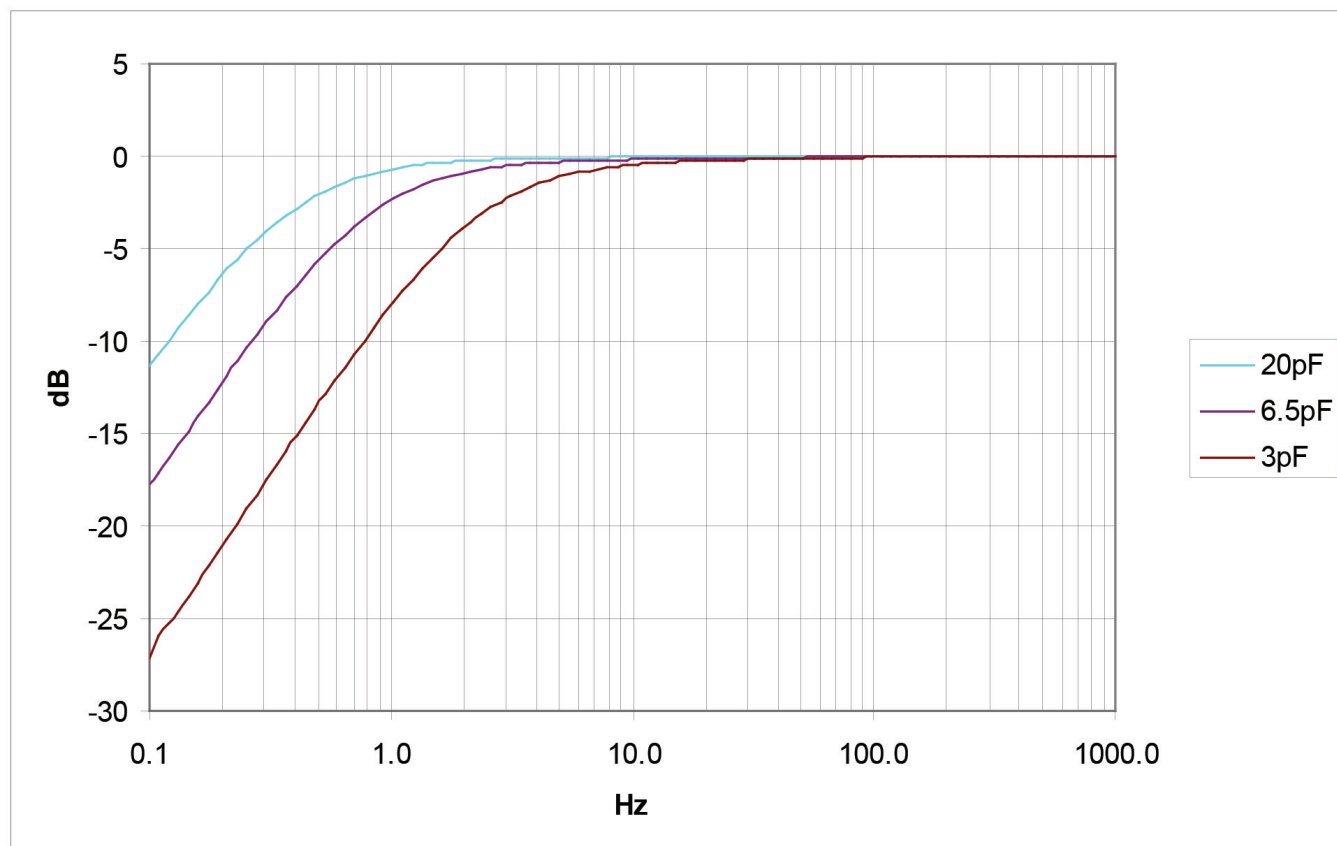
## Connector

GRAS 26AA Preamplifier is supplied with 30 cm cable terminating in a 4-pin LEMO plug. It is for use with the GRAS Intensity Probe 50 AI. An extension cable, AA0057, is available with a 4-pin LEMO connector at one end and a 7-pin LEMO series 1B plug at the other end.

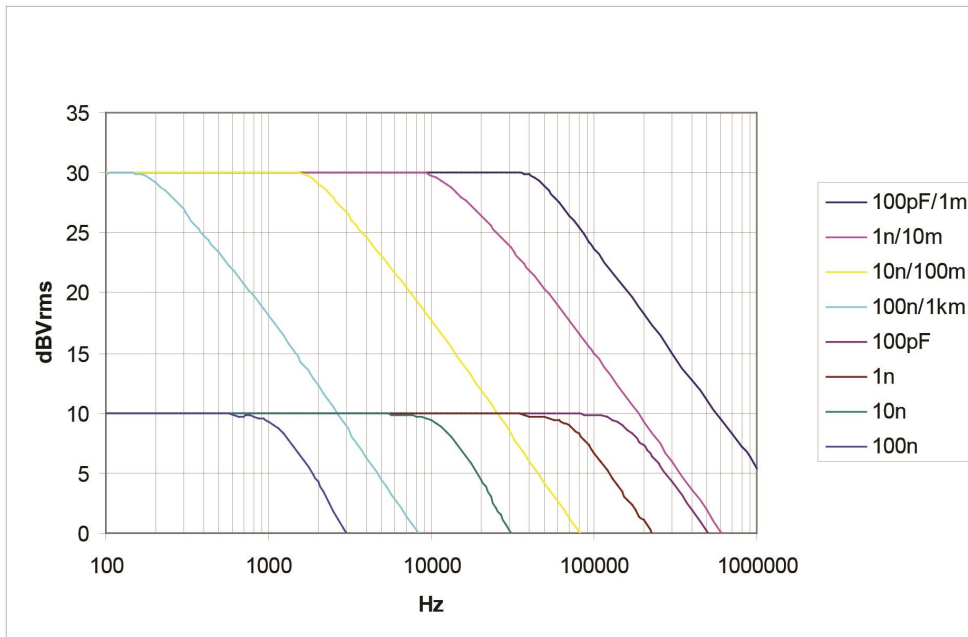


Frequency range ( $\pm 0.2$ dB) with 18 pF microphone dummy	Hz	2.5 to 200 k
Slew rate	V/ $\mu$ s	20
Output impedance	$\Omega$	75
Output Voltage Swing, max. @ $\pm 14$ V/+28V power supply	V <sub>p</sub>	12
Output Voltage Swing, max. @ $\pm 60$ V/+120V power supply	V <sub>p</sub>	50
Noise (A-Weighted) max.	$\mu$ V	2.5
Noise (A-Weighted) typ.	$\mu$ V	1.8
Noise (Linear 20 Hz – 20 kHz) max.	$\mu$ V	6
Noise (Linear 20 Hz – 20 kHz) typ.	$\mu$ V	3.5
Gain	dB	-0.29
Power supply, single	V	28 to 120
Power supply, balanced	V	$\pm 14$ to $\pm 60$
DC-offset, min., single supply	V	$0.5 \times V_s - 1$
DC-offset, max., single supply	V	$0.5 \times V_s + 4$
DC-offset, balanced supply	V	-1 to 4
Temperature range, operation	$^{\circ}$ C / $^{\circ}$ F	-30 to 70 / -22 to 158
Temperature range, storage	$^{\circ}$ C / $^{\circ}$ F	-40 to 85 / -40 to 185
Humidity range non condensing	% RH	0 to 95
Connector type		4-pin LEMO (FGG.0B.304)
CE/RoHS compliant/WEEE registered		Yes / Yes, Yes
Weight	g / oz	22.0 / 0.78

Conditions: 23  $^{\circ}$ C Ambient temperature,  $\pm 60$ V/+120V power supply, 18 pF dummy microphone, 3 m output cable.



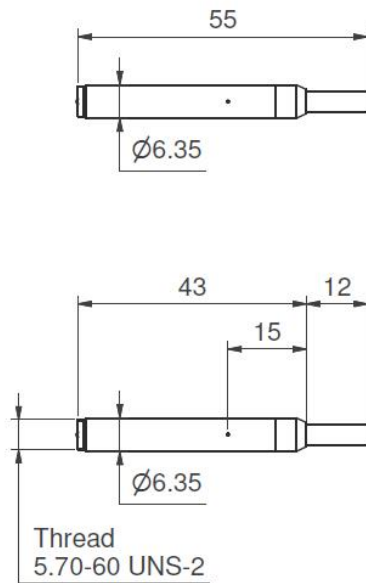
*Typical frequency response for 1/2" (20 pF), 1/4" (6.5 pF) and 1/8" (3 pF) microphones*



Typical max RMS output signal with 120 V and 30 V supply

GRAS Sound & Vibration reserves the right to change specifications and accessories without notice.

Dimensions in mm



# GRAS Worldwide

Subsidiaries and distributors in more  
than 40 countries

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## ABOUT GRAS SOUND & VIBRATION

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

**GRAS** Sound  
& Vibration