GRAS 26HG

1/4" Preamplifier with 3 m Integrated Cable, Low Frequency



Freq range: 1 Hz to 200 kHz
Noise: 1.8 µV Gain: -0.29 dB
Special feature: For low frequency and low-noise applications

The GRAS ¼ Preamplifier Type 26HG is a small robust unit optimised for acoustic measurements using condenser microphones. It has a very low inherent noise level, a wide dynamic range and a wide frequency response from below 1 Hz toabove 200 kHz.

GRAS Sound & Vibration
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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

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

Noise

The electrical circuit in Type 26HG preamplifier 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

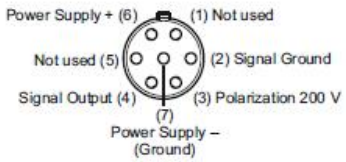
The low-frequency cut-off of the Type 26HG preamplifier is mainly determined by the input impedance of the preamplifier and the capacitance of the microphone capsule. The capacities 20 pF,6.5 pF and 3 pF equal the typical capacitances of 1/2", 1/4" and 1/8" microphone capsules respectively.

The high-frequency cut-off is determined by the preamplifier's ability to drive capacitive loads (slewrate), caused by the cable. For large-signals, the effects of these parameters must be accounted for when measurements are performed. The large-signal response for Type 26HG for various capacitive loads corresponding to different cable lengths is shown in the data sheet. The output level is in decibels relative to 1 Volt. Typical capacitance for the cable is 100 pF/m(30 pF/foot).

Type 26HG is typically used with a Type 40AN low frequency microphone capsule to reach a -3-dB cut-off frequency around 0.25 Hz.

Connector

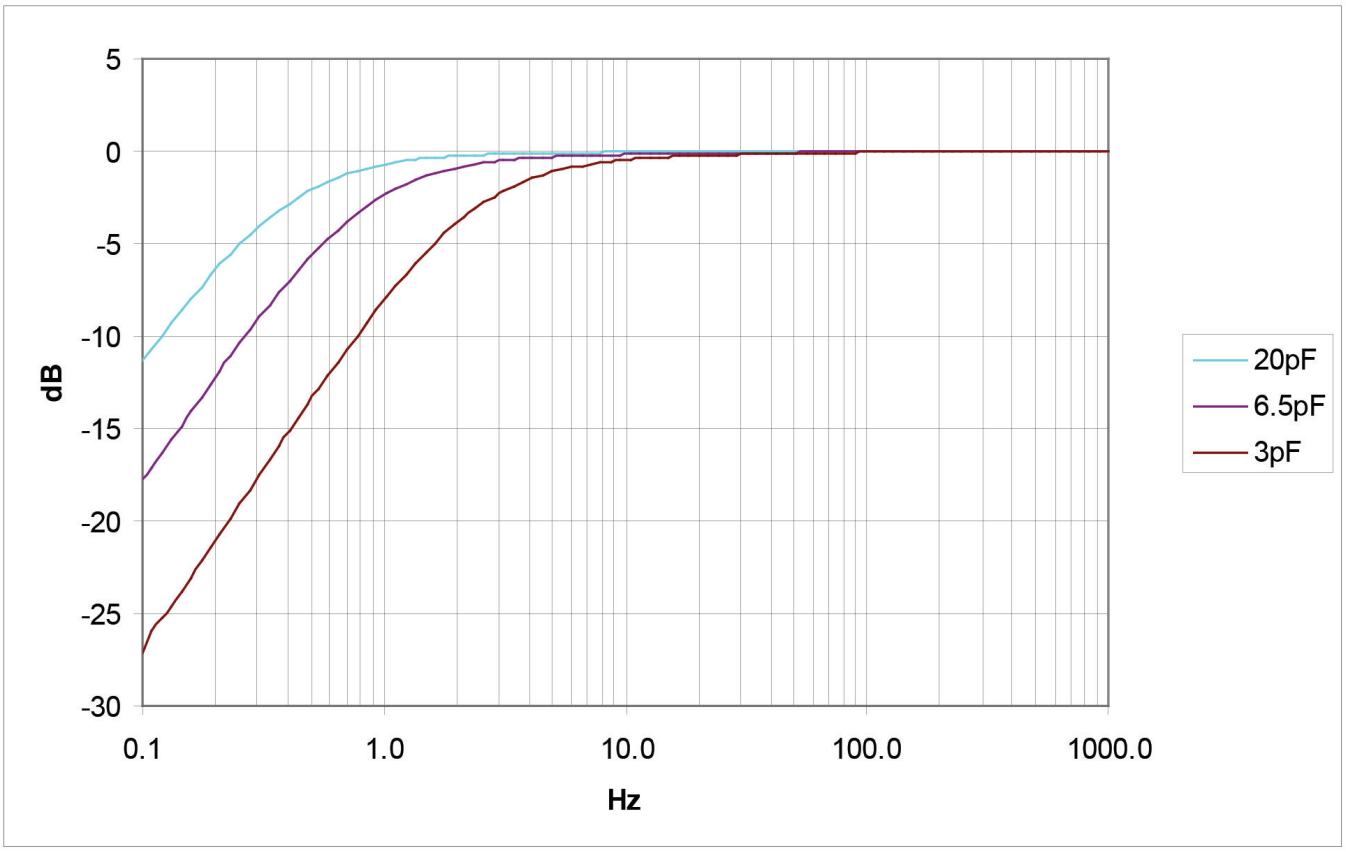
Preamplifier Type 26HG is provided with a 3-m lightweight cable terminating in a 7-pin LEMO series 1B plug. The cable is only 2.5 mm in diameter and will withstand temperatures from- 40 oC to +150 oC. An adaptor (GR0010) for GRAS 1/2" microphones is included.



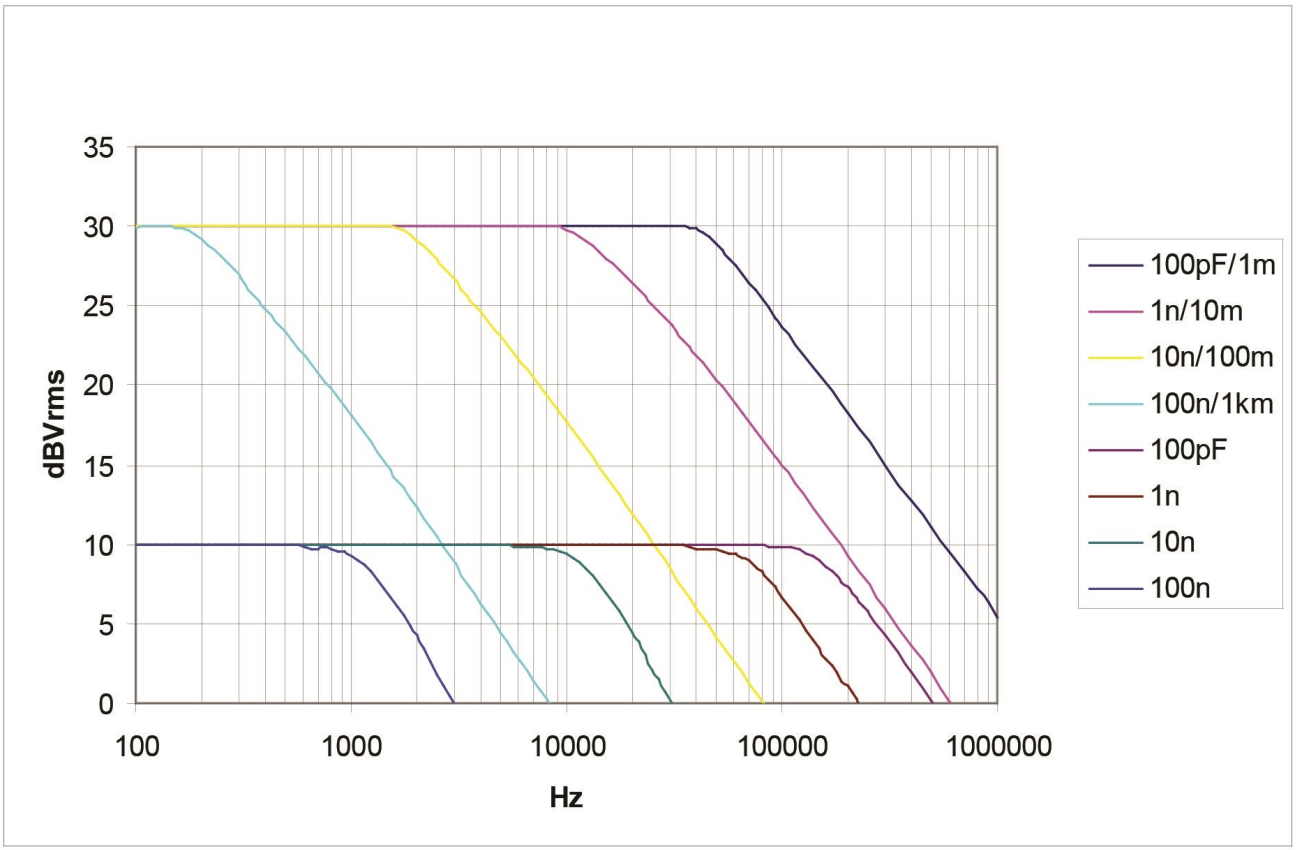
7-pin LEMO plug 1B male (ext. view)

Frequency range (±0.2 dB) with 18 pF microphone dummy	Hz	1 to 200 k
Slew rate	V/µs	20
Input impedance	GΩ // pF	40 // 0.4
Output impedance	Ω	75
Output Voltage Swing, max. @ ±14V/+28V power supply	Vp	12
Output Voltage Swing, max. @ ±60V/+120V power supply	Vp	50
Noise (A-Weighted) max.	µV	2.5
Noise (A-Weighted) typ.	µV	1.8
Noise (Linear 20 Hz – 20 kHz) max.	µV	6
Noise (Linear 20 Hz – 20 kHz) typ.	µV	3.5
High-pass filter @3dB cut-off	Hz	TBD
Gain	dB	-0.29
Power supply, single	V	28 to 120
Power supply, balanced	V	±14 to ±60
DC-offset, min., single suppy	V	0.5 x Vs - 1
DC-offset, max., single suppy	V	0.5 x Vs + 4
DC-offset, balanced supply	V	-1 to 4
Temperature range, operation	°C / °F	-30 to 70 / -22 to 158
Temperature range, storage	°C / °F	-40 to 85 / -40 to 185
Humidity range non condensing	% RH	0 to 95
Connector type		7-pin LEMO (FGG.1B.307)
CE/RoHS compliant/WEEE registered		Yes / Yes, Yes
Weight	g / oz	22.0 / 0.78

Conditions: 23 °C Ambient temperature, ±60V/+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

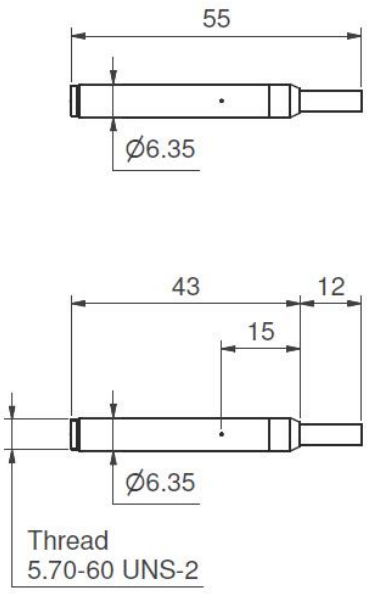


Typical max RMS output signal with 120 V and 30 V supply

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

Dimensions

Dimensions in mm



Included items

GRAS GR0010	Adapter for 1/4" preamplifier and 1/2" microphone

Optional items

GRAS AA0008	3 m LEMO 7-pin - LEMO 7-pin Cable
GRAS AL0029	1/4" Microphone Holder, POM
GRAS AL0013	1/4" Microphone Holder, Stainless Steel
GRAS AL0005	Swivel head
GRAS AL0006	Tripod
GRAS RA0063	Adapter for 1/8" microphone and 1/4" preamplifier
GRAS RA0006	Right-angled (90°) Adapter for 1/4" Microphone and 1/4" Preamplifier
GRAS RA0080	6pF Preamplifier-input adapter for 1/4" microphones
GRAS 12AA	2-Channel Power Module with gain, filters and SysCheck generator
GRAS 12AQ	2-Channel Universal Power Module with signal conditioning and PC interface

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GRAS Worldwide

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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 and related equipment for industries where acoustic measuring accuracy and repeatability are of the utmost importance. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, consumer electronics and other highly demanding industries. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect, trust and require.
GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands. Read more at www.grasacoustics.com

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