

¼" Preamplifier Type 26AS, Short

Product Data

Typical Applications

- For use in confined spaces
- High frequency measurements
- High pressure measurements
- Sound intensity measurements
- Near-field measurements
- Anechoic boxes
- Hearing-aid measurements

Special Properties

- Wide frequency range
- Low noise level
- Very small dimensions
- 7-pin LEMO connector

Description

The G.R.A.S. ¼" Preamplifier Type 26AS is a small robust unit short enough (see Fig. 5) for use in confined spaces, e.g. for binaural measurements with the KEMAR Manikin (Type 45BM or Type 45BA) or Hearing-protector Test Fixture Type 45CA. It has a very low inherent-noise level, a wide dynamic range and a frequency response from below 2Hz to above 200kHz.

Design

All G.R.A.S. 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 ensures reliable operation under humid conditions owing to the heat generated by internal power dissipation.

Dynamic Range

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



Fig. 1 ¼" Preamplifier Type 26AS

Noise

The electrical circuit in Type 26AS 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 26AS preamplifier is mainly determined by the input impedance of the preamplifier and the capacitance of the microphone capsule (see Fig. 3). The capacities 20 pF, 6.4 pF and 3 pF equal the typical capacitances of ½", ¼" and ⅛" 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. Fig. 4 shows the large-signal response for Type 26AS for various capacitive loads corresponding to different cable lengths. The output level is in decibels relative to 1 Volt. Typical capacitance for the cable is 100pF/m (30pF/foot).

Connector

The Type 26AS (Fig. 1) is provided with a 3-m lightweight cable terminating in a 7-pin LEMO series 1B plug (Fig. 2). The cable is only 2.5 mm in diameter and will withstand temperatures from -40°C to +150°C. An adaptor GR0010 for G.R.A.S. ½" microphones is included.

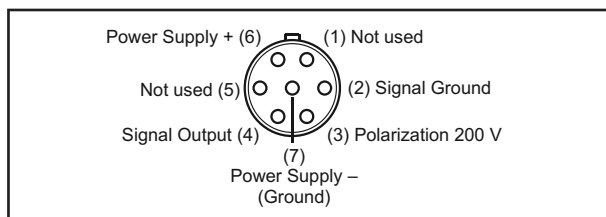


Fig. 2 7-pin LEMO plug 1B male (ext. view)

1/4" Preamp Type 26AS, Short

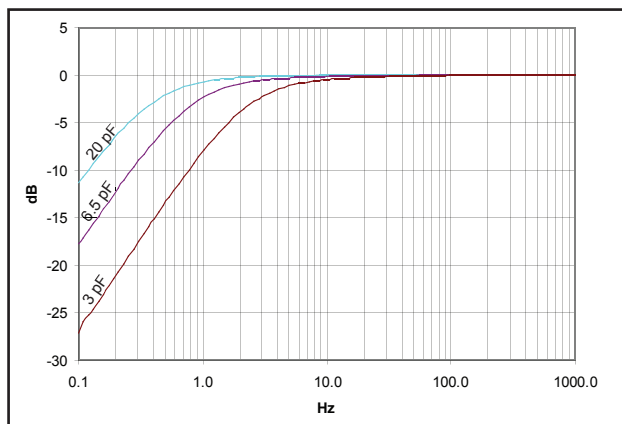


Fig. 3 Typical low-frequency response of Type 26AS for 1/2" (20 pF), 1/4" (6.5 pF) and 1/8" (3 pF) microphones

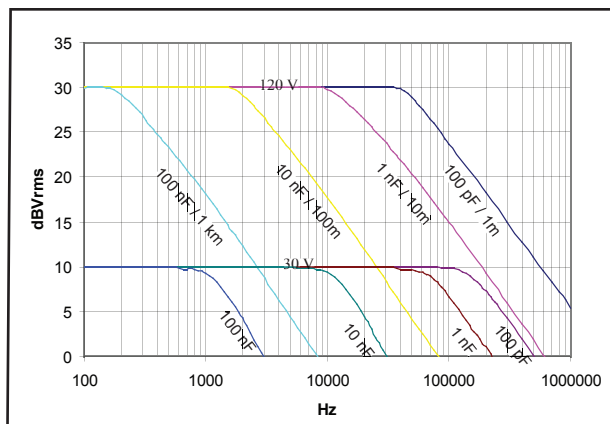


Fig. 4 Typical max. rms output signal with 120 V and 30 V supply

Specifications

Frequency response (18pF/small signal):
 2 Hz - 200 kHz: ±0.2 dB

Input impedance:
 20 GΩ, 0.4 pF

Output impedance (Cs = 20 pF, f=1000Hz):
 Typical 55 Ω

Noise (measured with 20 pF 1/2" dummy mic.):
 A-weighted: ≤4 μV rms
 Linear (20 Hz - 20 kHz): ≤10 μV rms

Gain:
 Typical: -0.25 dB

Power supply:
 Single: 28 V (0.7 mA) to 120 V (2.5 mA)
 Dual: ±14 V (0.7 mA) to ±60 V (2.5 mA)

Maximum signal-output voltage (peak):
 from ±10 V to ±50 V

Temperature:
 Operation: -30 °C to +70 °C
 Storage: -40 °C to +85 °C

Relative humidity:
 Operation: 0 to 95 %
 Storage: 0 to 95 %

Dimensions:
 Diameter: See Fig. 5
 Length: See Fig. 5
 Weight (without cable): 3 g (0.4 oz)
 Weight (with cable + LEMO conn.): 47 g (1.7 oz)

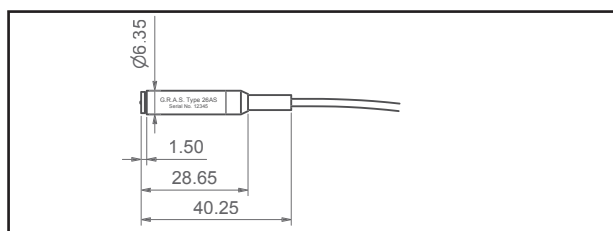


Fig. 5 Main dimensions given in millimetres

Accessories

- Included**
- GR0010: 1/4" to 1/2" adapter for use with G.R.A.S. 1/2" microphones
- Optional**
- RA0001: Right-angled (90°) Adapter for 1/2" microphone and 1/4" preamplifier
 - RA0003: Adapter for 1/2" microphone and 1/4" preamplifier
 - RA0006: Angled (90°) Adapter 1/4" to 1/4".
 - AA0008: Extension cable, 3 metres
 - AA0009: Extension cable, 10 metres
 - AA0012: Extension cable, 30 metres
 - AA0014: Extension cable, 100 metres
 - AA0020_XX: Extension cable, XX metres (customer-specified length)
 - AA0013: Tripod adapter for 1/4" preamplifier
 - RA0096: Tripod adapter for 1/4" preamplifier with angular adjustment
 - Type 12AK: 1-Channel Power Module incl. SysCheck Generator
 - Type 12AA: 2-Channel Power Module incl. SysCheck Generator
 - Type 12AQ: Computer-controlled Power Module incl. SysCheck Generator

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice.