

GRAS 40HT

1/2" Lownoise Microphone System for Confined Spaces



Freq range: 10 Hz to 16 kHz
Dyn range: 6.5 dB(A) to 113 dB
Sensitivity: 800 mV/Pa

The GRAS 40HT 1/2-inch Lownoise Microphone System for Confined Spaces has specifications similar to GRAS 40HH but is designed for little space applications.

Introduction

GRAS 40HT can measure sound pressure levels below the threshold of human hearing; and is amply suitable for sound-power measurements on even very quiet products. Its very wide dynamic range permits measurements down to below – 2 dB re.20 µPa (in 1/3-octave bands) from 20 Hz to 20 kHz.

Typical applications and use

40 HT is for low sound pressure measurements and very low sound power measurements.

Design

40HT comprises a special high-sensitive ½-inch Condenser Microphone GRAS 40AH, a ¼-inch High-impedance Preamplifier [GRAS 26HG](#) with adapter [GRAS GR0010](#) for the ½-inch microphone, and special Gain and Filter Unit GRAS 26HT.

The Gain and Filter Unit and Microphone are an individually-matched combination. To complete the system, a special single or 10-channel power module (available from GRAS) is required, i.e. [GRAS 12HE](#) for single-channel measurements or [GRAS 12HM](#) for 1 to 10 channel measurements.

Each channel provides all voltages required for 40HT and polarizing its microphone.

The Gain and Filter Unit GRAS 26HT has a built-in overload indicator (which is repeated on the chosen power supply) and a frequency correction facility for both pressure-microphone operation as well as free-field microphone operation.

Microphone

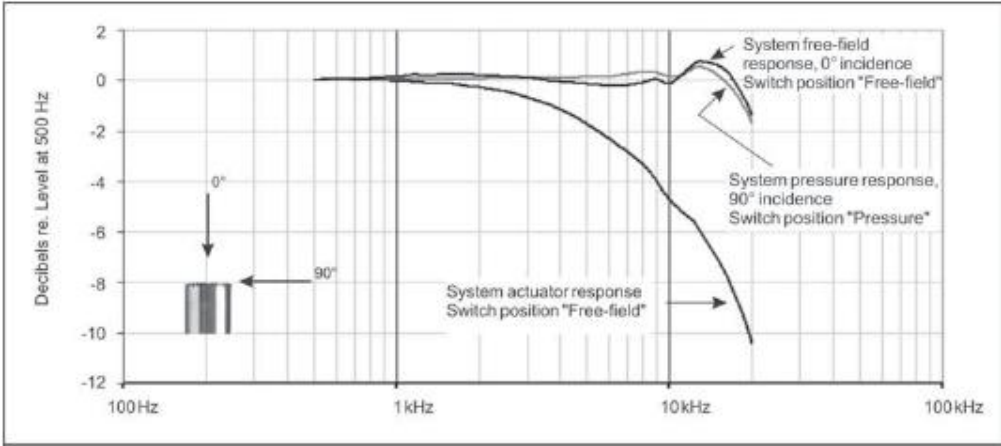
The GRAS 40AH microphone is an externally polarized microphone with a specially reduced inherent noise floor in order to achieve a high dynamic range and wide frequency range. Its diaphragm is specially tuned to yield high sensitivity

coupled with low internal-noise generation.

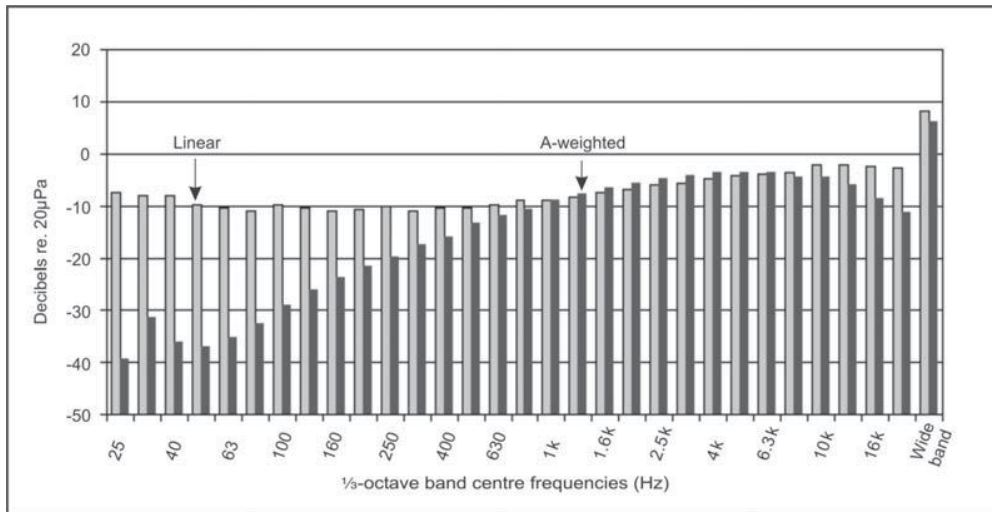
Frequency response and noise floor

The chosen power supply has a two-position switch for selecting which microphone operation to use, i.e. pressure or free-field. A typical free-field response for an angle of incidence of 0 ° is shown in the data sheet when the 40HT is switched to free-field operation. Also shown is a complete low-noise measuring system, a typical noise floor in 1/3-octave bands for both the linear and A-weighted cases.

| | | |
|--|---|------------------------|
| Frequency range (± 1 dB) | Hz | 12.5 to 10 k |
| Frequency range (± 2 dB) | Hz | 10 to 16 k |
| Frequency range (± 3 dB) | Hz | 6 to 20 k |
| Dynamic range lower limit (microphone thermal noise) | dB(A) | 6.5 |
| Dynamic range upper limit | dB | 113 |
| Set sensitivity @ 250 Hz (± 2 dB) | mV/Pa | 800 |
| Polarization voltage | V | 200 V / Traditional |
| Microphone venting | | Rear |
| Output impedance | Ω | 47 |
| Temperature range, operation | $^{\circ}\text{C}$ / $^{\circ}\text{F}$ | -20 to 60 / -4 to 140 |
| Temperature range, storage | $^{\circ}\text{C}$ / $^{\circ}\text{F}$ | -40 to 85 / -40 to 185 |
| CE/RoHS compliant/WEEE registered | | Yes/Yes/Yes |



Typical frequency response



Typical noise floor

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

Included items

| | |
|---------------------------|---|
| GRAS 40AH | High sensitive 1/2" microphone |
| GRAS 26HT | Gain and filter unit |
| GRAS 26HG | Lownoise 1/4" preamplifier with adapter for the 1/2" microphone |

Optional items

| | |
|-----------------------------|---|
| GRAS 12HF | 1-Channel Power Module for Lownoise Systems |
| GRAS 12HM | 10-Channel Power Module for Lownoise Systems |
| GRAS AM0069 | Windscreen for 1/2" Microphones |
| GRAS 42AA | Pistonphone, Class 1 |
| GRAS RA0090 | Pistonphone Coupler |
| GRAS AL0006 | Tripod |
| GRAS RA0096 | Adjustable, high quality, stainless steel tripod adapter |
| GRAS AA0046 | 3 m LEMO 7-pin - LEMO 7-pin Cable for Low-noise measuring system |
| GRAS AA0047 | 10 m LEMO 7-pin - LEMO 7-pin Cable for Low-noise measuring system |

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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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