GRAS 41AC-4

LEMO Outdoor Microphone for Community and Airport Noise (0 V pol.)

Standard: IEC 61672-1
Configurable for 90 or 0 degrees of incidence
IP55 proof

The 41AC-4 is an outdoor microphone for unattended use for a prolonged period of time. It can be used for community noise applications or for monitoring of overhead aircraft noise.

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Introduction

The 41AC-4 is a small precision outdoor microphone according to IEC 61672-1 for monitoring of community noise and the noise of overhead aircraft.

Typical Applications and Use

With state-of-the-art weather protection and extensive use of high-grade stainless steel, the 41AC-4 is ideal for long-term unattended monitoring of community noise and noise from overhead aircraft.

It can easily be configured for measurement of noise with 90 degrees of incidence, typically community noise, or – with the proper correction data – for measurement of noise with 0 degrees of incidence, typically overhead aircraft. A USB flash drive with the necessary 1/12 octave correction data is part of the delivery.

Design

The 41AC-4 has been designed to meet the need for a precise and reliable outdoor microphone that can be part of a permanent installation. The 41AC-4 is waterproof and fulfils the requirements of IP-55.

It uses a 40AE-S2 1/2" Prepolarized Free-Field Microphone, High Sensitivity and a 26AK 1/2'' Preamplifier with Integrated LEMO Connector.

Microphone and preamplifier are mounted inside a high-grade stainless steel housing. The top cone – also made of stainless steel – has been perfected for best acoustical response with the 40AE-S4 microphone. In addition to its acoustical function, the top cone acts as a bird spike.

The 40AE-S4 microphone has been modified for optimal response with respect to the sound field and the top cone's internal cavity. The protection grid is a special design that offers added water protection.

The wind screen eliminates the effects of air flow and also serves as part of the 41AC-4's water protection. It is glued to a detachable tube that ensures correct positioning. A locking system eliminates the risk of accidental dislocation. It is designed to withstand a wide range of weather conditions and temperatures for a very long period, i.e. easily a year or longer.

It comes with an adapter for pipe mounting. An adapter for tripod mounting is also part of the delivery.

Compability

The 41AC-4 uses a prepolarized microphone with a LEMO type preamplifier. It requires a cable with 7-pin LEMO connector and an analyzer/sound level meter with LEMO connector and 0 V polarization voltage.

Calibration

Before leaving the factory, all GRAS products are calibrated in a controlled laboratory environment using traceable calibration equipment.
An individual test certificate stating the sensitivity and frequency response is included with each product.

Performance and Warranty

GRAS outdoor microphones are made of components from our proven standard portfolio and are all manufactured of high-quality material and branded parts that were chosen and processed to ensure life-long stability and robustness.

All parts are manufactured and assembled at the factory in Denmark by skilled and dedicated operators in a verified clean-room environment. The microphone diaphragm, body and unique protection

grid are made of high-grade stainless steel and make the microphone set resistant to physical damage as well as corrosion caused by aggressive air or gasses.

This, together with the enforced gold-plated microphone terminal which guarantees a highly reliable connection, enables us to offer 5 years warranty against defective materials and workmanship. The windscreen comes with a 6-month warranty.

The warranty does not cover products that are damaged due to negligent use, an incorrect power supply, or an incorrect connection to the equipment.

Service and Repairs

All repairs are made at GRAS International Support Center located in Denmark. Our Support Center is equipped with the newest test equipment and staffed with dedicated and highly skilled engineers. Upon request, we make cost estimates based on fixed repair categories.

If a product covered by warranty is sent in for service, it is repaired free of charge, unless the damage is the result of negligent use or other violations of the warranty. All repairs are delivered with a service report, as well as an updated calibration chart.

Specifications

Polarization/Connection		0 V / CCP
Frequency range (±1 dB)	Hz	5 to 10 k
Frequency range (±2 dB)	Hz	3.15 to 20 k
Dynamic range lower limit (microphone thermal noise)	dB(A)	17
Dynamic range upper limit with GRAS preamplifier @ +28 V / ±14 V power supply	dB	138
Dynamic range upper limit with GRAS preamplifier @ +120 V / ±60 V power supply	dB	144
Set sensitivity @ 250 Hz (±3 dB)	mV/Pa	50
IEC 61094-4 Compliance		WS3P
Temperature range, operation	°C / °F	-30 to 70 / -22 to 158
Temperature range, storage	°C / °F	-40 to 85 / -40 to 185
Temperature coefficient @250 Hz	dB/°C / dB/°F	-0.01 / - 0.006
Static pressure coefficient @250 Hz	dB/kPa	-0.014
Humidity range non condensing	% RH	0 to 100
Humidity coefficient @250 Hz	dB/% RH	-0.001
Influence of axial vibration @1 m/s²	dB re 20 µPa	62
Connector type		7-pin LEMO (FGG.1B.307)
CE/RoHS compliant/WEEE registered		Yes/Yes/Yes
Weight	g / oz	1250 / 44.092

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

Dimensions

When mounted on pipe: 343 mm/ 13 1/2 in above the top of the pipe.

Ordering info

Included items

GRAS 40AE-S2	1/2" Preolarized Free-field Microphone, High Sensitivity
GRAS 26AK	1/2" Preamplifier with integrated connector
SW0005	USB flash drive containing correction data (resolution: 1/12 octave)
AM0378	Wind Screen
GR1794	Release Tube for LEMO conncetor
RA0286	1" Pole Mount Adapter
GR1096	Tripod Adapter
SK0017	Tripod Thread Adapter

Optional items

AA0008	3 m LEMO 7-pin - LEMO 7-pin Cable
AA0009	10 m LEMO 7-pin - LEMO 7-pin Cable
AA0012	30 m LEMO 7-pin - LEMO 7-pin Cable
AA0014	100 m LEMO 7-pin - LEMO 7-pin Cable
GRAS 12AK	1-Channel Power Module with gain, filters and SysCheck generator
GRAS 42AP	Intelligent Pistonphone, Class 0

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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 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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